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THE AGRICULTURAL AND TECHNICAL COLLEGE OF NORTH CAROLINA



Greensboro

CATALOGUE ISSUE 1961-1962

The BULLETIN of
**THE AGRICULTURAL AND TECHNICAL
COLLEGE OF NORTH CAROLINA**

(CO-EDUCATIONAL INSTITUTION)



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**SIXTY-SIXTH ANNUAL CATALOGUE
1960-1961**

With Announcements for 1961-1962

GREENSBORO, NORTH CAROLINA

1961

JANUARY							APRIL							JULY							OCTOBER							
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1962

JANUARY							APRIL							JULY							OCTOBER						
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COLLEGE CALENDAR

1961 - 1962

FALL QUARTER

Sept. 7, 8—Thurs., Fri.	Pre-Session Faculty Conference
Sept. 11, 12, 13—Mon., Tues., Wed.	Freshman Week Program
Sept. 14—Thurs.	Registration, Freshmen
Sept. 15, 16—Fri., Sat.	Registration, Upperclassmen
Sept. 18—Mon.	Classes Begin
Sept. 19—Tues.	Fall Quarter Convocation
Sept. 25—Mon.	Last day for making changes in schedules
Nov. 23, 24—Thurs., Fri.	THANKSGIVING HOLIDAYS
Nov. 30-Dec. 1, 4—Thurs., Fri., Mon.	Fall Quarter Examinations

WINTER QUARTER

Dec. 8, 9—Fri., Sat.	Registration, Winter Quarter
Dec. 11—Mon.	Classes Begin
Dec. 15—Fri.	Last day for making changes in schedules
Dec. 16—Sat.	Classes will be held until 12:00 Noon (Observe Monday's Schedule.)
Dec. 16—Sat. 12:00 Noon	CHRISTMAS HOLIDAYS BEGIN
Jan. 3, 1962—Wed.	Classes Resume
Jan. 9—Tues.	Winter Quarter Convocation
March 5, 6, 7—Mon., Tues., Wed.	Winter Quarter Examinations

SPRING QUARTER

March 12, 13—Mon., Tues.	Registration, Spring Quarter
March 14—Wed.	Classes Begin
March 20—Tues.	Spring Quarter Convocation (Honor's Day)
March 21—Wed.	Last day for making changes in schedules
April 20 at 1:00 p.m.—Fri.	EASTER HOLIDAYS BEGIN
April 30—Mon.	Classes Resume
May 18, 21, 22—Fri., Mon., Tues.	Examinations, Seniors
May 22—Tues.	Senior Day
May 27—Sun.	Baccalaureate Exercises
May 29, 30, 31—Tues., Wed., Thurs.	Spring Quarter Examinations
June 2—Sat.	Commencement Exercises

SPECIAL DAYS

Nov. 7—Tues.	Founder's Day
Nov. 5-11	American Education Week
Jan. 21-24, 1962, inclusive	Religious Emphasis Week
Feb. 16—Fri.	Arbor Day
Feb. 18-24	Brotherhood Week
March 20—Tues.	Honor's Day

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The Department of Agricultural Economics

The Department of Agricultural Education

The Department of Animal Husbandry

The Department of Biology

The Department of Chemistry

The Department of Home Economics

The Department of Plant Industry

The Department of Short Courses

II. THE SCHOOL OF EDUCATION AND GENERAL STUDIES

The Department of Education and Psychology

The Department of English

The Department of Foreign Languages

The Department of Music

The Department of Physical Education

The Department of Social Sciences

III. THE SCHOOL OF ENGINEERING

The Department of Architectural Engineering

The Department of Art

The Department of Business

The Department of Electrical Engineering

The Department of Industrial Education

The Department of Mathematics

The Department of Mechanical Engineering

The Department of Physics

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V. THE GRADUATE SCHOOL

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A.B., Howard University; M.A., *Ibid.*
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JAMES J. WARE, JR., *Technical Sergeant*.....*Supply Supervisor*

R. E. JONES.....*State Extension Agent*
MINNIE M. BROWN.....*Assistant Home Demonstration Agent*
L. R. JOHNSON...✓.....*District Agricultural Agent*
JOHN A. SPAULDING...✓.....*District Agricultural Agent*
HAROLD M. MCNEILL.....*District Agricultural Agent*
HELEN W. BRANFORD.....*District Home Economics Agent*
JOSEPHINE S. WEAVER.....*District Home Economics Agent*
GENEVIEVE K. GREENLEE.....*Home Economics Specialist*
B. B. RAMSEUR.....*Home Economics Specialist*
W. C. COOPER.....*District 4-H Club Leader*
GWENDOLYN H. FRITZ.....*District 4-H Club Leader*
P. P. THOMPSON.....*Extension Poultry Specialist*
T. W. FLOWERS.....*Extension Horticulture Specialist*
SAMUEL J. HODGES...✓.....*Extension Agronomy Specialist*
R. L. WYNN.....*Extension Dairy Specialist*
ANNABELLE K. GAMBLE.....*Secretary, District Home Agents*
RUBY F. GARFIELD
 Secretary, District 4-H Club Leaders and Poultry Specialist
MILDRED H. PARKER
 Secretary-State Agent and Assistant State Home Demonstration Agent
JOAN B. MARTIN.....*Secretary, Men Specialists*
DORIS H. HARSHAW.....*Secretary, District Agents*
BARBARA JOHNSON
 Secretary, Assistant State Agent and Home Economics Specialists

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GENERAL INFORMATION

HISTORICAL STATEMENT

The Agricultural and Technical College was established as the "A. and M. College for the Colored Race" by an act of the General Assembly of North Carolina ratified March 9, 1891. The act read in part:

That the leading object of the institution shall be to teach practical Agriculture and the Mechanic Arts and such branches of learning as relate thereto, not excluding academical and classical instruction.

The College began operation during the school year 1890-1891, before the passage of the state law creating it. This curious circumstance arose out of the fact that the Morrill Act passed by Congress in 1890 earmarked the proportionate funds to be allocated in bi-racial school systems to the two races. The A. and M. College for the White Race was established by the State Legislature in 1889 and was ready to receive its share of funds provided by the Morrill Act in the Fall of 1890. Before the college could receive these funds, however, it was necessary to make provisions for Colored students. Accordingly, the Board of Trustees of the A. and M. College in Raleigh was empowered to make temporary arrangements for these students. A plan was worked out with Shaw University in Raleigh where the College operated as an annex to Shaw University during the years 1890-1891, 1891-1892, and 1892-1893.

The law of 1891 also provided that the College would be located in such city or town in the State as would make to the Board of Trustees a suitable proposition that would serve as an inducement for said location. A group of interested citizens in the city of Greensboro donated fourteen acres of land for a site and \$11,000 to aid in constructing buildings. This amount was supplemented by an appropriation of \$2,500 from the General Assembly. The first building was completed in 1893 and the College opened in Greensboro during the fall of that year.

In 1915 the name of the institution was changed to The Agricultural and Technical College of North Carolina by an Act of the State Legislature.

The scope of the college program has been enlarged to take care of new demands. The General Assembly authorized the institution to grant the Master of Science degree in education and certain other fields in 1939. The first Master's degree was awarded in 1941. The School of Nursing was established by an Act of the State Legislature in 1953 and the first class was graduated in 1957.

The General Assembly repealed previous acts describing the purpose of the College in 1957, and re-defined its purpose as follows:

"The primary purpose of the College shall be to teach the Agricultural and Technical Arts and Sciences and such

branches of learning as relate thereto; the training of teachers, supervisors, and administrators for the public schools of the State, including the preparation of such teachers, supervisors and administrators for the Master's degree. Such other programs of a professional or occupational nature may be offered as shall be approved by the North Carolina Board of Higher Education, consistent with the appropriations made therefor."

Five presidents have served the institution since it was established. They are as follows: Dr. J. O. Crosby (1892-1896), Dr. James B. Dudley, (1896-1925), Dr. F. D. Bluford, (1925-1955), Dr. Warmoth T. Gibbs, (1956-1960), and the current president, Dr. Samuel DeWitt Proctor, who began his duties July 1, 1960.

LOCATION

The College is located only nine blocks from the center of Mid-town Greensboro—a city of 120,000—noted for its friendliness and hospitality. This excellent urban location of the College has many distinct advantages since business establishments, transportation depots, theaters, and churches are all within reasonable walking distance. It is a further advantage to students who seek part-time employment in the business district of the city.

Greensboro offers many cultural and educational advantages because of the six senior colleges which are located there. The student attending A. and T. College may take advantage of the scholarly programs presented by these six colleges.

INSTITUTIONAL MEMBERSHIPS

The Agricultural and Technical College is a fully accredited member of the Southern Association of Colleges and Secondary Schools, and holds institutional membership in the following associations:

- American Association of Colleges for Teacher Education
- American Association of Collegiate Registrars and Admission Officers
- American Association of Land-Grant Colleges and State Universities
- American College Public Relations Association
- American Council on Education
- American Public Welfare Association
- Association of American Colleges
- Association of Collegiate Deans and Registrars
- Association of Collegiate Schools of Architecture
- College Language Association
- Council of Member Agencies, Department of Baccalaureate and Higher Degree Programs (Nursing)
- National Association of Business Teacher Education
- National Association of College and University Food Service
- National Commission on Accrediting
- National Institutional Teacher Placement Association
- National League for Nursing
- North Carolina College Conference
- North Carolina League for Nursing

THE PHYSICAL PLANT

In 1891, the citizens of Greensboro donated to the College fourteen acres of land off East Market Street and \$11,000. This sum was supplemented by an appropriation of \$2500 from the General Assembly. Dudley Hall was completed in 1893 and the College opened in the fall of that year in Greensboro. Previously, it had operated as an annex to Shaw University in Raleigh, North Carolina. From fourteen acres, the campus has grown to more than 700 acres including the college farms. In 1946 the area known as North campus was purchased from the Federal Government. Instruction takes place on all campuses of the College. The present facilities offer the student adequate living and working conditions.

DUDLEY MEMORIAL BUILDING—On January 27, 1930, the original Dudley Building was destroyed by fire. The erection of the new Dudley Hall was begun immediately thereafter and on February 15, 1931 the building was completed. Dudley Hall is a fireproof structure of three stories. It is larger than the old building and better suited to the needs of a growing college. The building contains classrooms, conference rooms, offices for the President, the Treasurer, the Bursar, and other administrative officers.

FERDINAND D. BLUFORD LIBRARY—The library is a multi-story, brick building of non-symmetrical design with limestone trim. This beautiful building was finished in the Fall of 1954 and is located in the center of the quadrangle of the main campus. It is easily accessible from all parts of the campus, and faces one of the main U. S. Highways of the State. The building was designed to accommodate 250,000 volumes, and is equipped with many modern facilities, including service elevator, electrically operated book lift, and pneumatic tubes for the efficient handling of books. In addition to the above, the building has beautifully furnished student and faculty lounges, an assembly room, and special art collection and exhibit rooms.

MORRISON HALL—Morrison Hall is a fireproof, three-story building with basement. It contains rooms for 130 women students.

ANNIE W. HOLLAND HALL—Annie W. Holland Hall is a dormitory for women. It was completed in 1938 and is named in honor of Mrs. Annie W. Holland, who for a long period, was State Supervisor of Colored Elementary Schools in North Carolina. The building is fireproof and is located in one of the most beautiful sections of the campus. It contains rooms for 150 students.

VANSTORY HALL—Vanstory Hall, formerly known as the South Dormitory, is a three-story, brick building, which contains rooms for 92 students.

CROSBY HALL—Crosby Hall, named in honor of the first president of the College, houses the Audio-Visual Center and music classrooms.

ALEXANDER GRAHAM HALL—The Alexander Graham Hall is a three-story fireproof structure located near U. S. Highway 70. The building was constructed in 1939 with funds appropriated by the state and the Federal Emergency Administration of Public Works. Industrial Arts, Business Education and Mathematics are housed here.

SAMUEL P. SEBASTIAN INFIRMARY—The College Infirmary is a modernly equipped building located on the main campus. There are six semi-private rooms, two isolation units, and two double wards containing a total of thirty-eight beds. Other departments are as follows: X-ray room, clinical laboratory, pharmacological laboratory, dental laboratory, first aid room, emergency treatment room, diet kitchen, and main kitchen.

RICHARD B. HARRISON AUDITORIUM—The Richard B. Harrison Auditorium, completed in 1940, is named in honor of the noted actor and teacher who gained world renown as "De Lawd" in the great stage production of 1930, *The Green Pastures*.

ROBERT L. CAMPBELL HALL—The Robert L. Campbell Hall is a single-story brick building located on North Campus. The building contains classrooms, administrative offices and supply rooms for Air and Army ROTC Units. It was completed and furnished at the beginning of the year 1957.

MURPHY HALL—Murphy Hall is a one-story fireproof building which contains the cafeteria, the kitchen, and the refrigeration plant.

FLORENCE GARRETT HOUSE—The Florence Garrett House is the home management residence of the Department of Home Economics. The building was named in honor of Mrs. Florence Garrett who was among the first women students to attend the College, and who bequeathed her small estate to the College as the beginning of an endowment fund.

NORTH CAMPUS—In the fall of 1946, the College was successful in purchasing the military hospital area of the local army overseas replacement depot. This plot comprises about seventy-five acres of improved land and is one block north of the main campus.

CHARLES A. HINES HALL—Charles A. Hines Hall, constructed in 1950, was named in honor of a former Chairman of the Board of Trustees. It is a modern, four-story, fireproof, brick structure and houses the Department of Chemistry. It has an auditorium, with a seating capacity of 155, ten classrooms, seven student laboratories, six research laboratories, and a reading room.

THE WOMEN'S NEW DORMITORY—The Women's New Dormitory is a three-story, fireproof structure, located near the center of the main campus. The building is contemporary in design and will accommodate 200 girls with provision for recreation, beauty rooms, kitchen, and launderette.

AUSTIN W. CURTIS HALL—The Women's dormitory is a modern three-story structure with basement facilities which include a beautiful recreation room, kitchenette, beauty room, and laundry room. The building has a spacious modernistic lounge on the first floor. The building has seventy-four student rooms. A guest room is also included in this dormitory which is located in the area adjacent to Annie W. Holland Hall.

W. KERR SCOTT HALL—Scott Hall was the first of the permanent buildings erected on North Campus. Completed and furnished in 1951 at the cost of nearly \$2,000,000, it is the largest building on the campus and one of the largest, and most modern buildings of its kind in the South. It contains club and recreation rooms, lounges, baggage rooms, play areas, and living quarters for 1,010 students as well as apartments for counselors and supervisory personnel.

THE PRESIDENT'S HOME, THE OAKS—The President's home, a two-story brick structure of modified Georgian architecture, was completed and occupied in 1950. It is located under a group of massive oaks on the northwestern corner of the main campus.

JULIAN PRICE HALL—The trades building was constructed in 1951 and is located on North Campus. It is a modern fireproof structure with facilities for training in auto mechanics, cabinetmaking, upholstering, carpentry, drafting, electric wiring, machine shop, masonry, photography, plumbing, radio and television servicing, sheet metal, shoe repairing, tailoring, welding, painting and decorating.

In addition to the eighteen shops and laboratories, the building contains classrooms for related instruction, a projection room, a reading room, and office of the dean of the Technical Institute.

ANNEX TO PRICE HALL—The Annex to Price Hall is a modern one story building located at the north end of Price Hall. It was completed in 1959 with shop facilities for masonry, painting and decorating. A classroom and drafting room are provided for related instruction.

CHARLES H. MOORE GYMNASIUM—Moore gymnasium was constructed in 1953. The main area includes two large basketball courts which can permit the playing of two basketball games at the same time. Seating facilities will accommodate more than 3,000 spectators.

The departmental offices for the department of physical education are located at the front of the building. In the rear is a large swimming

pool, a combination dance area, individual physical education and activity room together with a training room, and class and varsity locker rooms.

CENTRAL HEATING PLANT—The heating plant, erected in 1952, is located on the south side of the campus on a railway siding. It contains two 30,000 pounds per hour steam boilers and the latest mechanical equipment including complete fuel and ash handling systems. The plant is designed to meet all heating needs as they arise. The plant furnishes steam and hot water to all the buildings on the campus through approximately 8,500 feet of underground tunnels.

LAUNDRY AND DRY CLEANING PLANT—The laundry and dry cleaning plant is a modern fireproof structure located near the center of the main campus. The plant is equipped to serve both the students and the faculty adequately. A complete course is offered in the latest methods of Laundry Management and Dry Cleaning.

THE COLLEGE FARMS—The College has 593 acres of farm land on which there has been developed a poultry farm, a dairy farm, a piggery, a beef cattle farm and a general farm.

The poultry farm occupies twenty acres. The buildings consist of a commercial laying house with a capacity for 1200 layers; a breeding house for 600 birds; two broiler houses with a yearly capacity of 18,000; a turkey house for 400 birds; and a general utility house with facilities for egg storage, incubation, and processing. In addition, there is an eight-room duplex which houses the plant attendants. The poultry farm provides students with practical experience in egg and broiler production management, incubation, and brooding.

The dairy farm occupies a tract of 170 acres. The dairy plant consists of a seventy stanchion milking barn with feed and milk rooms attached, a calf barn, a maternity barn, a bull barn, a lounging shed, a manure pit, two silos with a gross capacity of 230 tons and a seven-room duplex apartment house that accommodates the plant attendants. The Dairy Herd consists of registered Jersey and registered Holstein cattle.

The Piggery is located on a 30 acre tract of land. The land has been planted in improved pasture and is fenced. Portable hog houses are used for shelter. A modern farrowing house has recently been constructed.

The Abattoir is located on the McConnell Road Farm near the Farm Superintendent's home. This building provides facilities for slaughtering and processing beef cattle, swine and sheep. It has a slaughter room, chill room, ageing room, cutting room, offal room, storage room and office.

The Beef Cattle unit, recently established, consists of registered Aberdeen Angus and Hereford, and grade Hereford cattle. These cattle are located on a 105 acre tract of land.

The experimental sheep farm is located on a 55 acre tract of land. Presently, grazing and feeding experiments have been initiated.

The general farm operates as a service unit for the other divisions. This unit produces the hay and silage for beef cattle and dairy and maintains the pastures for all the units. All practices are performed with mechanized equipment.

D. S. COLTRANE HALL—The D. S. Coltrane Hall is a one-story brick structure. This building provides office space, work room, conference room, reading room, assembly room, and storage space for the Director of the Agricultural Extension Service and his staff.

GEORGE W. CARVER HALL—George W. Carver Hall, completed in 1955, is a modern, fireproof, brick structure located on North Campus. It includes offices for the Dean of the School of Agriculture and the Agricultural staff. It houses classrooms and laboratory facilities for Animal Husbandry, Agricultural Education, Agronomy, Agricultural Economics, Forestry, Floriculture, Landscape Gardening, and Poultry. An auditorium with a seating capacity of 266 and research facilities are included in this building also.

GREGG CHERRY HALL—Cherry Hall is a three-story, L-shaped, fireproof building of contemporary design. The building, brick with limestone trim, was completed in 1954, and contains classrooms and laboratories for engineering and physics, the offices of the faculty, and Dean of the School of Engineering.

ROSCOE WARD HALL—Ward Hall was completed and furnished in 1954. It is a one-story, fireproof building located on North Campus, which houses the Dairy Industry Department. The building is equipped with the most modern machinery and conveniences available for the handling, processing, and distributing of milk and milk products.

The front section of the building contains offices, a class room, and laboratories. The laboratories are equipped with the most modern equipment available for teaching courses in milk and milk products.

NOBLE HALL—Noble Hall is a fireproof, three-story building with basement. The first floor houses for the most part the bacteriological laboratory, classroom, reading room and the Administrative offices for the School of Nursing.

The second and third floors of this building provide rooms for lectures and demonstrations in nursing practice, as well as lecture rooms and laboratories for botany and for general advanced zoology. Offices for the Department Head and staff are also provided on these floors.

DEWITT C. BENBOW HALL—Benbow Hall is a two-story brick structure with a partial basement. The building contains three lecture

rooms, faculty offices, faculty record room, reference-dining room, student lounge, storage room and laboratories for food preparation, quantity cookery, catering, clothing, textiles, experimental foods, nutrition, arts and crafts, and home furnishings.

E. R. HODGIN HALL—Hodgin Hall, a three-story brick structure, was completed in 1955. It includes (1) classrooms for education, English, foreign languages, health, physical education, and social studies; (2) laboratories and clinics for dramatics, public speaking, improvement of reading, research and teaching; and (3) offices for the Dean of the School of Education and General Studies, director of guidance, and thirty teachers.

PUBLIC RELATIONS-ALUMNI AFFAIRS BUILDING—The Public Relations-Alumni Affairs Building is a modern five room Cape Cod Cottage which houses offices for these operations. In addition to a comfortable lounge provided for alumni and visitors, it contains two private offices, a photographic darkroom, a workroom, and a photograph-engraving morgue.

CHARLES L. COOPER HALL—Cooper Hall, a modern four-story brick structure with living quarters for four hundred men students, as well as apartments for counselors, guest rooms, recreation, lounges, barber shop and trunk storage facilities. It was completed in 1955 at a cost of approximately \$678,000.

NURSERY SCHOOL AND KINDERGARTEN BUILDING—A two-story brick structure with facilities for a Nursery School and Kindergarten which serves as a laboratory for the Home Economics Department.

JAMES REID GREENHOUSE—The greenhouse is located on North Campus. It was completed in 1953, and includes a headhouse and 5000 square feet of growing space. The headhouse includes the heating unit and storage space for supplies and equipment. The growing area provides plants and laboratory space for the divisions of Agronomy, Botany and Horticulture.

STUDENT SERVICE BUILDING—A modern fireproof, brick structure, centrally located to classrooms and student dormitories.

The building contains an attractive cafeteria, the latest design of kitchen and refrigeration equipment, a student's lunchroom, the college bookstore and post office.

ATHLETIC FIELDHOUSE—A modern, one-story, fireproof, brick structure located on the north campus near the athletic fields. The building contains locker rooms and showers and houses the football, baseball and track equipment.

THE AUDIO-VISUAL CENTER

The Audio-Visual Center is a resource pool of materials, services and facilities. It purports to assist in the improvement of instruction by providing means of facilitating the communication of ideas, attitudes, and facts in the teaching-learning process. The Center is located on the first floor of Crosby Hall. It includes an office area, film inspection area, storage area, browsing area, preview room, and a room for group showings. The Audio-Visual Center provides the following services for the campus:

- Circulation of audio-visual materials
- Procurement of free loan 16mm films from outside sources
- Information on rental films from other sources
- Projectionists for audio-visual showings
- Projection room with equipment
- Previewing facilities
- Assistance in the selection and preparation of materials
- Production of tape recordings, charts, and graphs

EVENING CLASSES

The College conducts evening classes for in-service-teachers and others who can qualify for the courses offered. All evening courses are conducted on the same basis as courses that are offered in the regular day classes, and may be applied towards a degree. Admission requirements for the Evening Classes are the same as for the regular day classes.

SUMMER SCHOOL

The fifty-ninth annual Summer Session of the A. and T. College Summer School will be held for six weeks, beginning the second week in June. A second session will begin in July and continue for three weeks.

Aside from the splendid opportunity which the Summer School offers teachers-in-service to raise their certificates and thereby obtain better salaries, the College makes it possible for the ambitious teacher to obtain a standard degree by attending the summer school.

College students may shorten their stay in college by attending summer school. Students from other institutions may enter the summer session for credit in their respective institutions, by permission from either the president or dean of their respective colleges. Such students will not be required to present a complete record of their previous train-

ing, but will be required to present a signed statement from the president or dean indicating the summer courses for which credit will be allowed.

College graduates may use their time in summer school meeting requirements for the Master of Science degree. Persons interested in earning this degree should make application for candidacy early in order that their program may be arranged with this end in view.

STUDENT PERSONNEL SERVICES

The broad objective of the Student Personnel Services program at the Agricultural and Technical College is to help each student to become better acquainted with himself, and to provide him with systematic aid in solving problems and making adjustments to conflicting situations as they arise. It is believed that the student should have a wide range of information about himself, his interests, his abilities, his personal and social development. He should become acquainted with the various problems of academic, vocational, social and recreational adjustments facing him. With this kind of information available, the Student Personnel Services program attempts to help each student to face his problems and to formulate plans for solving them. It is believed that each individual has a right to receive assistance in making satisfactory choices and adjustments. Furthermore, this assistance should increase his ability for self-direction. Several individuals and agencies share the responsibility for the Student Personnel Services program at the College. These include the Guidance Services Center, Health Service Center, the Director of Religious Activities, the Dean of Students, the personnel deans, and the faculty advisers. Although each one has a carefully defined area of responsibility within the framework of the program each individual or agency is concerned with the total adjustment of the individual student.

GUIDANCE SERVICES

Provision is made for testing, counseling, and guiding all students at the College through the College Guidance Center, which is located in Hodgkin Hall. The Center is staffed with trained counselors, who are available at all hours of the day to work with individual students. The Center is equipped to handle educational and vocational problems, minor personal problems, and problems of social adjustment. The staff of the Center is trained in both group and individual testing, covering the areas of intelligence, aptitude, personality, interest, and achievement.

The Guidance Center conducts a freshman testing program for all freshmen. The results of this program are used to assist freshmen in the planning of their educational and vocational careers. The Center also conducts other such testing programs as are required or desired

by departments of the College. In addition to these duties, the Center provides for placement of graduates through the services of a placement counselor.

Persons not enrolled in the College may use the services of the Center upon the payment of a fee of \$15.00.

HEALTH SERVICE

The purposes of the Health Service program are to improve and protect personal and environmental health conditions and, thereby, to develop a safe and healthy college community. Through a competent staff of doctors, dentists, and nurses, the Health Service Center gives professional attention to student health problems. The basic components of the health program are the following:

1. Medical Services:

The College Physician, who is the Medical Director of the Health Services, is in attendance in the infirmary daily—morning and evening—and is “on call” for any emergency situations.

2. Dental Services:

A dentist is in attendance service weekly—Tuesday mornings and Thursday afternoons.

3. Nursing Services:

Registered nurses, under the direction of a head nurse, are in attendance daily on a twenty-four-hour basis.

4. Follow-up and Consultation Services:

Follow-up services are given, and referrals to specialists are made upon recommendation of the College Physician.

5. The Physical Examinations:

a. Freshmen, transfer students, athletes, and nursing students will be given a physical examination at the Sebastian Infirmary during the Fall Quarter of each year.

b. Upperclassmen are required to get a medical examination from a physician prior to the opening of each school year and to present a completed medical examination form at registration.

c. All freshmen and transfer students who enter school at the beginning of the Winter and Spring Quarters should secure a complete physical examination before reporting to the campus, and should bring the medical examination report with them. A blood test and an X-Ray are required also.

6. Blood Test:

All freshmen, transfer students, and special student groups (Nursing and advanced ROTC students) are required to have a blood test every year. Other students who have been admitted to the College will not be required to take a blood test each year. The blood test may be secured at the local health department or from the student's family doctor. It must be secured between June 30 and the opening of the fall term in September. If a student fails to get a blood test before reporting to the campus, he must secure one after he arrives. The cost of the blood test will be paid by the student.

7. Chest X-Rays:

Chest X-Rays are required of freshmen and transfer students. These may be secured at the local health department any time after June 30 of the current year.

8. Special Medical Service Fees:

See the section on fees in this catalog.

RELIGIOUS ACTIVITIES

One of the purposes of the College is to maintain a high moral tone and to develop a broad, tolerant religious spirit among its students. The College Chapel, organized on a non-denominational basis, provides an opportunity for students and faculty to continue the development and enrichment of their spiritual lives. There are two non-denominational worship services per month. These services are supplemented with musical vespers and other kinds of programs each Sunday evening.

STUDENT ORGANIZATIONS

(Honor Societies)

Alpha Kappa Mu Honor Society

The Alpha Kappa Mu Honor Society is a national scholarship organization with local chapters established in accredited colleges. The local chapter is known as Gamma Tau Chapter of the Alpha Kappa Mu Honor Society. The qualifications for Gamma Tau are the same as those of the national organization. They are as follows:

1. Candidates must have completed ninety quarter hours, with an average of not less than 3.30. These must include all required courses listed for freshmen and sophomores.
2. Membership is open to all students of the College, provided that they meet scholastic requirements; in the case of transfer students, there must have been a chapter of Alpha Kappa Mu or

some other honor society with equivalent standards, rules and regulations at the institution from which they transferred.

3. Candidates must have a clear record in deportment.

The Society encourages participation in at least one extra-curricular activity. All students recommended by the Registrar and the Dean of Students as having the qualifications listed above are eligible for membership.

The Sophist Society is composed of regular college students of freshmen, sophomore, and junior classification who maintain a minimum average of 3.30. The purpose of this organization is to encourage high scholarship among these students. Members who qualify for membership in the Sophist Society may join Alpha Kappa Mu Honor Society during their junior or senior year.

Sigma Rho Sigma Recognition Society

Sigma Rho Sigma Recognition Society is a national honor society for social science majors. Its membership is open to graduates and undergraduates. Chapters of the Society are located in the various colleges represented in the membership of the Association of Social Science Teachers in Negro Colleges. The purposes of the Society are the following:

1. To encourage study, promote research, and to recognize achievement in the field of social science.
2. To promote the cooperation of students in the field of human relations.
3. To promote professional growth and development among the members.

To be eligible, one must be a junior concentrating in the social sciences, must have an average of 3.00, and must have a minimum credit of twenty-five hours in the social sciences.

Beta Kappa Chi

The purpose of this society shall be to encourage and advance scientific education through the following: (a) original investigation, (b) the dissemination of scientific knowledge, and (c) the stimulation of high scholarship in pure and applied science.

Kappa Delta Pi

Kappa Delta Pi is an honor society in education which admits both men and women to membership. The Society is international and is composed of laureate, honorary, institutional, and alumni chapters. Membership is open to undergraduate students, graduate students, and

faculty members. Undergraduates must be of junior classification. They are required to have an average above the upper quartile of the institution and at least nine quarter hours of course work in education. Candidates must possess desirable personal habits and leadership attributes. Membership is by initiation only.

Pi Delta Phi, National French Honor Society

The Pi Delta Pi National Honor Society is open to all French majors and minors. Its purpose is to stimulate greater interest in French language and culture. The Society elects those students who have displayed a keen interest in the language and culture and have demonstrated their admiration for French.

Candidates must have completed twenty or more hours of French, including phonetics. They must have a cumulative average of 2.50 and an average of 3.00 in all French courses.

The local chapter is known as Beta Lambda, and is affiliated nationally.

Pi Omega Pi, National Business Education Fraternity

The local chapter of Pi Omega Pi is known as Gamma Phi and is open to students who have entered upon a teacher-training program in either typing and shorthand and in general business and bookkeeping. They must have reached the third quarter of the sophomore year with twenty-four quarter hours in business and in education subjects, with a superior rating (3.00); and they must have at least a medium rating (2.50) in all other subjects. The purposes of Pi Omega Pi are stated below:

1. To create, encourage, promote, and extend interest in scholarship.
2. To aid in activities for civic betterment in schools.
3. To encourage and foster high ethical standards in business and professional life.
4. To teach the ideal of service as the basis of all worthy enterprise.

Fraternities and Sororities

The following national fraternities have chapters at the College:

Alpha Phi Alpha
Kappa Alpha Psi
Phi Beta Sigma
Omega Psi Phi
Alpha Phi Omega

The following national sororities have chapters at the College:

Alpha Kappa Alpha
Delta Sigma Theta

Zeta Phi Beta
Iota Phi Lambda
Sigma Gamma Rho

Pan-Hellenic Council

The Pan-Hellenic Council is a federation of all fraternities and sororities on the campus. Its membership is composed of elected representatives from each Greek-letter organization. The main purpose is joint action for maintaining high standards in fraternity and sorority life at the institution.

OTHER ORGANIZATIONS

College 4-H Club

The Collegiate 4-H Club is composed of students who have had previous experience as 4-H Club members in high school. An informal meeting of a business and social nature is held monthly. Honorary members may be elected to the club from time to time.

The Collegiate NFA Club

The Collegiate Chapter of the New Farmers of America is composed of agricultural students who are former NFA members or who are trainees enrolled in the teacher-training department of the School of Agriculture. The purpose of the collegiate chapter is to give training and experience to students who will later become teachers of vocational agriculture. Honorary members may be elected to the collegiate chapter of the New Farmers of America.

The Agricultural Association

The Agricultural Association is composed of agricultural students. It meets twice monthly for business and social purposes. Honorary members may be elected to the association from time to time.

The College Bands

The several college bands occupy an important place in the life of the institution. The Band Department is complete with full instrumentation and equipment for the many varied activities of marching and concert organizations. Expert instruction in all band instruments is given by a staff of trained bandmasters. The organizations in the Band Department are as follows:

1. *Senior Bands*—The 100-piece marching group for the many athletic events that take place in the fall. This is open to those students who have four or more years of experience on a band instrument. Also, the 80-piece symphony concert group is open only to those qualified students who successfully audition for entrance.

2. *Military Band*—A separate organization that furnishes music for all military reviews, drills, and parades. It is open only to members of the Infantry and Air Force Reserve Officers Training Corps.

These organizations offer a splendid opportunity to competent and worthy students to learn band music without extra expense to themselves.

Foreign Language Clubs

Le Cercle Francais and *El Circulo Espanol* meet once a month during the academic year.

The Fortnightly Club

The Fortnightly Club offers its members an opportunity to discuss some of the literary works which have influenced the intellectual, spiritual, and cultural development of Western Civilization. Interested students will be encouraged to present their creative endeavors for discussion and evaluation.

The Debating Society

The Kappa Phi Forensic Society, better known as the Debating Society, is designed to stimulate interest in public speaking and debate. It is composed of college students who have distinguished themselves in public performances in these fields. The Society awards a certificate of merit to any graduating senior who has participated in non-varsity debates or who has otherwise rendered meritorious service to the Kappa Phi Kappa Forensic Society for at least two years.

The Richard B. Harrison Players

The drama society of the Agricultural and Technical College offers its members experience in writing, staging, and directing plays as well as experience in acting. The opportunity is advantageous not only to those who are interested in the theatre but also to those who, at some time in the future, may be asked to direct a play.

Choral Organizations

The College Choir, the Men's Glee Club, the Women's Glee Club, and the Concert Choir have won for themselves an inviable reputation for the genuine artistry of their work. These organizations, open to all qualified students, offer extra-curricular activity which is at once instructive and enjoyable.

The P.E.M. Club

The P.E.M. Club is an organization to promote professional growth and to encourage fellowship among physical education major and minor students. Membership is open to all students who have successfully completed preliminary requirements and have been accepted as majors or minors in the Department of Health and Physical Education.

The Dance Group

The Modern Dance Club presents an opportunity for students to learn and create various types of dances. Members of the group participate in local and regional programs annually. This organization is open to all interested students. Dance Club members are eligible for intramural awards.

Intramural Athletics

A program of intramural athletic activities is conducted, on an elective basis, throughout the school year. Schedules and tournaments are arranged, and equipment is made available by league managers and physical education majors. All students may participate in intramural activities.

The Women's Athletic Association

The Women's Athletic Association is a member organization of the Women's Sports Day Association and is open to all women students who desire participation in competitive and leisure time athletic activities, such as hockey, soccer, softball, basketball, volleyball, badminton, and archery. Competent and active members of the Association are selected to engage in competitive activity and fellowship with women students of other colleges during semi-annual Sports Day meetings. Appropriate awards are given for outstanding performance and active participation. The organization holds business meetings twice each month.

Varsity Athletics

The intercollegiate athletic program is under the supervision and direction of the Athletic Committee, consisting of faculty, alumni, and students. The sports included in the program are football, basketball, baseball, and track. The College is a member of the Central Intercollegiate Athletic Association, the National Association of Intercollegiate Athletics, and the National Collegiate Athletic Association, and is subject to the rules and regulations of those bodies.

The varsity letter shall be awarded by the Athletic Committee, upon the recommendation of the coaching staff, to members of the football,

baseball, basketball, and track team for outstanding performance and active participation. The varsity letter is awarded to members of the cheering squad who serve with distinction.

The Lettermen's Club

The Lettermen's Club aims to bring about a union between college athletes of similar high ideals of leadership, manhood, sportsmanship, and fair play. Membership in this organization is limited to Varsity lettermen of the Agricultural and Technical College. Any Varsity letter winner may be nominated for membership after having been approved by the coach of the sport that the nominee represents.

The Student Nurse Organization

The Student Nurse Organization is called the TELOCA, (TEnder-LOving-CAre), and functions in conjunction with the North Carolina Student Nurses Association. Its objectives are as follows:

1. To assist the student in her growth as a member of a democratic society.
2. To serve as a channel of communication between student nurses and faculty members.
3. To plan social and professional activities for the students.
4. To cooperate with the State Student Nurse Association of North Carolina and the American Nurses' Association in working for the professional and educational advancement of nursing.

LOANS, SCHOLARSHIPS, AND PRIZES

SUSIE B. DUDLEY SCHOLARSHIP—This scholarship of \$100 in cash is made possible by Mrs. Leora J. Spaulding, Class of 1935, and is given in honor of Mrs. Susie B. Dudley, wife of a former president, Dr. James B. Dudley. It is open to women students who are doing or who plan to do graduate study at the College in some phase of English or education related to dramatics, public speaking or writing—activities in which Mrs. Dudley was personally interested.

KAPPA ALPHA PSI FRATERNITY SCHOLARSHIP—Alpha Nu Chapter of the Kappa Alpha Psi Fraternity annually awards a scholarship of \$50 to the highest ranking freshman during the fall quarter. In the event of a tie, the two top-ranking freshmen are awarded scholarships of \$25 each.

A. AND T. COLLEGE ALUMNI SCHOLARSHIPS—Four scholarship grants of \$1,000 each are given annually by the Agricultural and Technical College Alumni Association to entering freshmen students

who earn the highest scores in special competitive college entrance examinations. The grants are made in annual installments of \$250 each, renewable upon the condition that the student maintains a certain minimum standard each year.

The examinations are administered during the spring at several testing centers throughout the State of North Carolina. Announcement of time and place of the examinations is made through the high schools and publicity media. Prospective graduates of accredited high schools in or out of state, ranking in the upper fourth of their classes, are eligible to take the examinations without charge.

KROGER SCHOLARSHIPS—The Kroger Scholarship Plan provides two scholarships per year of \$250 each. One scholarship offers aid to a freshman majoring in home economics, and the other to a freshman majoring in agriculture. Awards are made on the basis of scholastic achievement in high school, leadership qualities demonstrated, and financial need.

SEARS, ROEBUCK FOUNDATION SCHOLARSHIPS—The Sears, Roebuck Foundation makes available each year nine scholarships worth \$200 each to freshman students who enroll in the School of Agriculture. These scholarships are awarded to majors in agriculture and in home economics, on the basis of scholastic aptitude of the applicants. Preference is also given to those who would be unable to attend college without this aid.

SMITH-DOUGLAS N.F.A. SCHOLARSHIPS—Two scholarships are given annually to aid incoming freshmen who major in agriculture. They are worth \$500 each. Recipients receive \$150 during their freshman and sophomore years, and \$100 during their junior and senior years, provided they maintain a satisfactory scholastic record. Applicants must be residents of North Carolina, and must have been active members of a local chapter of the New Farmers of America. These scholarships are awarded on the basis of need, scholastic aptitude, potentialities for leadership, and achievement in farming. Applications should be filed with the Executive Secretary of the N.F.A. by June of each year.

BURLINGTON INDUSTRIES FOUNDATION—The Burlington Industries Foundation provides two \$1,000 scholarships for students in engineering. These are paid over a period of two years at the rate of \$500 each for the junior and senior years of college. The students are selected by the engineering faculty on the basis of scholarship, leadership, and financial need.

WILLIAM H. FOUSHEE MEMORIAL SCHOLARSHIP CUP—Dr. J. M. McGee of Greensboro each year presents a scholarship cup in

memory of William H. Foushee, Jr., a former student of A. and T. College, to the member of the Junior Class with the highest scholastic average.

THE CHARLES L. COOPER AWARD—Mu Psi Chapter of the Omega Psi Phi Fraternity presents annually this award in memory of Dr. Charles L. Cooper, a former professor of industrial education at the Agricultural and Technical College. It is presented to the student in industrial arts with the highest average above two points. (2.00)

THE REGISTER AWARD—As a means of promoting a wider interest and greater activity on the part of the students in the field of journalism, the College *Register* awards a gold key to those members of the graduating class who complete a period of at least two years of meritorious service as members of the *Register* staff.

ALUMNI ATHLETIC AWARD—The Philadelphia branch of the Agricultural and Technical College Alumni Association awards a gold medal each year to the student of the graduating class making the best record in major intercollegiate sports.

ALUMNI SERVICE AWARD—The Gate City Chapter (Greensboro) of the Agricultural and Technical College Alumni Association makes an award each year to that member of the graduating class, voted by the Executive Committee of the Faculty as having rendered the "most distinctive service to the College and to the community."

KAPPA PHI KAPPA KEY—The Kappa Phi Kappa Key was first awarded in 1928 by the Debating Society. The key is awarded to each member of the graduating class who has been a speaker on the College varsity debating team for two years.

DEBATING TROPHY—The Rand-Hawkins-McRae debating trophy was provided by Messrs. J. M. Rand, J. A. Hawkins and S. D. McRae, graduates of the College, Class of 1906, and is awarded annually to the members of the graduating class who have completed at least three years of varsity debating.

FRESHMAN-SOPHOMORE DEBATING TROPHY—The College presents to the winning team at the annual Freshman-Sophomore debate, a debating trophy with the name of the class and the year of the debate. This trophy signifies the increasing interest in oratory and research, and serves as an incentive for freshman and sophomore achievement in the forensic arts.

BROTHERHOOD AWARD—The Brotherhood Award of \$50 is presented by Mr. Ralph Johns of Greensboro to the student who has done most to promote brotherhood and goodwill.

THE HOME ECKERS SCHOLARSHIP—A scholarship award of \$25 will be given to the home economics student who has maintained a grade average of 3.00 and has completed 100 quarter hours. She must also have met other standards set up by the club. This scholarship is to be used to assist in defraying her college expenses.

THE RALPH JOHNS ATHLETIC SCHOLARSHIP—The Ralph Johns Athletic Scholarship of \$100 is presented by Mr. Ralph Johns of Greensboro, North Carolina, to foster sportsmanship, leadership, and manliness in competitive sports.

MEDALS

The John Merrick Medal will be awarded to the student completing the four-year mechanical course with the best record in the college department.

The William Andrew Rhodes Medal will be awarded to the male or female student having good character and making the best record in musical activities during the school year. This award is sponsored by Dr. William Andrew Rhodes, composer, teacher, and conductor.

The M. F. Spaulding Medal will be awarded to the student completing the full four-year course in agriculture with the best record.

The Saslow's, Inc. Medal will be awarded (a) to the member of the graduating class who completes the four-year course in the School of Education and General Studies with the best record, and (b) to the student who graduates with the best record in social sciences.

STUDENT LOAN FUND

The Agricultural and Technical College Student Aid Fund was established by the Student Council of 1946-1947 to provide a source of revenue for loans to deserving students. This fund is supported by contributions from students, faculty members, and campus organizations. Any regular term student, duly registered, is eligible to apply for aid through this fund.

THE NATIONAL DEFENSE STUDENT LOAN PROGRAM

The Agricultural and Technical College participates in the National Defense Student Loan Program. This program was authorized by Public Law 85-864, the National Defense Education Act of 1958. It provides a loan fund from which undergraduate and graduate students may borrow on reasonable terms for the purpose of completing their higher education. A student must be a citizen of the United States, enrolled as a full-time undergraduate or graduate student in order to be eligible for

a loan. Application forms and additional information may be obtained from the Administrative Assistant to the President, The Agricultural and Technical College, Greensboro, North Carolina.

NORTH CAROLINA RURAL REHABILITATION CORPORATION STUDENT LOAN PROGRAM

Loans under this program are available to needy and worthy North Carolina farm boys and girls who plan to study agriculture or home economics. The loans bear interest at the rate of four percent per annum. Application forms and additional information may be obtained from North Carolina Rural Rehabilitation Corporation, Post Office Box 2403, Raleigh, North Carolina.

HOUSING

The College provides seven dormitories for its students. Female students are housed in Curtis, Holland, Morrison, Vanstory, and the New Dormitory for Women. Male students are housed in Scott Hall and Cooper Hall.

The dormitories include reception rooms and recreational facilities. All bedrooms are equipped with the basic articles of furniture. Personal items, including bed linen, are not supplied. These are the responsibility of the student.

All students, except those who are residents of Greensboro or those who commute from near-by communities, are required to live in the dormitories unless given permission to live elsewhere by the Dean of Students.

DEPORTMENT

Students will be expected to conduct themselves properly at all times. Any student who shows an unwillingness to conform to the rules and regulations that are prescribed or that may be prescribed to govern the student body will be asked to withdraw from the institution. Furthermore, any student whose deportment or behavior is not in harmony with the ideals or interests of the College will be suspended or expelled.

A student automatically forfeits his privilege of working for pay at the College when, for any reason, he is placed on probation because of misconduct.

FINANCIAL INFORMATION

SCHEDULE OF PAYMENTS

I. Schedule of Payments—North Carolina Students

	<i>Day</i>	<i>Boarding Only</i>	<i>Boarding and Lodging</i>	
			<i>Men</i>	<i>Women</i>
September 11, 1961	\$145.50	\$109.00	\$149.75	\$146.75
October 6, 1961		60.00	60.00	60.00
November 5, 1961		60.00	60.00	60.00
Total for Fall Quarter	\$145.50	\$229.00	\$269.75	\$266.75
December 5, 1961	\$ 93.00	\$ 56.50	\$ 96.25	\$ 93.25
January 9, 1962		60.00	60.00	60.00
February 8, 1962		60.00	60.00	60.00
Total for Winter Quarter ..	\$ 93.00	\$176.50	\$216.25	\$213.25
March 10, 1962	\$ 93.00	\$ 64.50	\$104.25	\$101.25
April 4, 1962		60.00	60.00	60.00
May 4, 1962		60.00	60.00	60.00
	\$ 93.00	\$184.50	\$224.25	\$221.25
Total for Year	\$331.50	\$590.00	\$710.25	\$701.25

II. Schedule of Payments—Out-of-State Students

September 11, 1961	\$235.33	\$198.83	\$239.58	\$236.58
October 6, 1961		60.00	60.00	60.00
November 5, 1961		60.00	60.00	60.00
Total for Fall Quarter		\$318.83	\$359.58	\$356.58
December 5, 1961	\$182.85	\$146.33	\$186.08	\$183.08
January 9, 1962		60.00	60.00	60.00
February 8, 1962		60.00	60.00	60.00
Total for Winter Quarter ..		\$266.33	\$306.08	\$303.08
March 10, 1962	\$182.85	\$154.33	\$194.08	\$191.08
April 4, 1962		60.00	60.00	60.00
May 4, 1962		60.00	60.00	60.00
Total for Spring Quarter ..		\$274.33	\$314.08	\$311.08
Total for Year	\$601.03	\$859.49	\$979.74	\$970.74

When making payments use money orders, cashier's checks, or certified checks. Do this even when the student brings his fees along with him. *Never use personal checks or cash*, for they may be lost before they are received by the College. Make all instruments payable to "A. and T. College" and mail or bring them to the A. and T. College, Greensboro, North Carolina in care of the Bursar's Office as it is the only office at the College authorized to receive money. Mailing quarterly payments two days earlier will improve our services to the student and prevent embarrassment to all concerned.

The fees listed above apply to all students and there will be no exceptions. The College cannot extend credit in anticipation of expected payments from any source.

III. Special Fees—Medical and Infirmary

\$3.00 Medical Examination for freshmen and transfer students (payable along with Quarter's fee).

\$1.00 per day after three days in the Infirmary during any one quarter. Day students will be charged for meals during the entire time in the Infirmary.

\$2.00 Ambulance trip.

IV. Special Fees—Special Occasion Fees

\$10.00 ROTC deposit must be paid in addition to regular fees at registration by all male students taking the course.

\$ 4.00 High school deficiency fee per course per quarter—payable before registering in the course.

\$ 4.00 Certificate Fee-Trade.

\$ 5.00 Undergraduate degree diploma fee.

\$ 4.00 Bachelor's cap and gown rental fee.

\$ 1.00 Transcript fee after the first one.

\$ 5.00 Fine for late registration.

\$35.00 Practice Teaching (other than Vocational Agriculture)

\$50.00 Senior Engineering inspection tour.

\$ 1.00 Key deposit for dormitory students.

V. Graduate Fees—General

1. All graduate students taking 9 quarter hours or more will be charged the customary fees of an undergraduate.

2. Persons taking 11 hours or less may elect to pay \$5.00 per quarter hour tuition plus the following additional fees:

Library fee \$3.00

Course fee 8.50

Registration fee 2.00

Out-of-State fee 7.50 per quarter hour

3. A fee of \$5.00 is charged to those who register for the first time.

VI. Graduate Fees—Thesis Program

1. Binding fee for four copies of Master's Thesis \$25.00
2. Publishing bulletin of abstracts 20.00
3. Master's diploma 5.00
4. Cap, hood and gown rental fee 8.25

VII. Graduate Fees—Non Thesis Program

1. Listing investigative paper in abstract bulletin\$ 20.00
2. Master's diploma fee 5.00
3. Cap, hood and gown rental 8.25

VIII. Auditing Course Fees—General

1. The auditing of courses shall be open to persons regularly enrolled as either full time or part time students and also to mature persons not enrolled as students even though such persons cannot satisfy entrance requirements.
2. Fees:*
 - a. Full-time students\$ 3.00 per course
 - b. Part-time students\$10.00 per course
 - c. Persons not enrolled\$15.00 per course

REFUNDING SCHEDULE

I. Refunding schedule when withdrawing from The Agricultural and Technical College:

- A. Board: Unused meal tickets at the rate of thirty-five cents.
- B. Laundry: Value of unused tickets in laundry book at the time of withdrawal—not to exceed \$2.00 per month for women and \$3.00 for men.
- C. Lodging: Days room not occupied, at the rate of forty-one cents per day from time of withdrawal.
- D. With the exception of the fees listed below, two-thirds of all fees will be refunded when the student withdraws from the College between the following dates:

September 7, 1961—October 1, 1961

December 8, 1961—December 16, 1961

March 12, 1962—April 1, 1962

*See Registrar's Office for details of registering for auditing courses.

After these dates, the refunds will be made only on payments on meals, laundry and lodging.

1. Registration fee
2. Book rental
3. College *Register*
4. Student Aid
5. College Annual
6. Picture fee
7. Guidance fee
8. Athletic fee

SPECIAL NOTICE

The Administration reserves the right to raise fees and charges without advance notice should conditions warrant.

OUT-OF-STATE STUDENTS

Non-resident students must pay an out-of-state fee. A non-resident student is one who comes into North Carolina from another state or from a foreign country for the purpose of attending College.

For this purpose any student whose parents have not lived in this state for more than six months immediately prior to his first enrollment in this college will be considered as non-resident, except in the case of:

1. Students twenty-one years of age at the time of their first enrollment, who are responsible for their bills, and who have resided in North Carolina for more than one year preceding the day of their first registration.
2. Students whose parents are in the United States military or government service and stationed out of state. In both of these cases such students will be regarded as residents.

Students cannot claim a change in resident status after they have enrolled. Those misrepresenting themselves in this respect in order to avoid paying the out-of-state fee will be subject to disciplinary action by the College.

SELF-HELP

The institution cannot guarantee jobs to students who expect to work their way through College. Many students find work in private families and in other occupations, and thereby defray a portion of their expenses. A person of ability and energy who can do work of any kind can generally find employment, but prospective students are cautioned against depending upon such unreliable sources of income.

SPECIAL NOTICE TO KOREAN VETERANS*(Payment of Fees)**

Public Law 550, 82nd Congress, differs from the law which provided educational benefits to veterans of World War II. One difference is the fact that under the law, the Veterans' Administration pays no money to the school for veterans' training. All money is paid directly to the veteran in the form of a monthly subsistence allowance as follows:

Veteran with no dependents	\$110
Veteran with one dependent	135
Veteran with two or more dependents	160

The veteran, therefore, is responsible for the meeting of all of his expenses. Usually two or three months elapse before the veteran receives his first check, so the veteran should be prepared to meet his expenses for the first three months. It is advisable to have, in addition to the money for regular College fees (see pages 51-54), enough money to purchase supplies, and incidentals.

Public Law 550 allows *only one* change in program. Therefore, the veteran should obtain vocational and educational counseling through the Veteran's Administration or through the College before enrolling in college. The veteran may obtain counseling through the Veterans' Administration by simply checking item No. 14 "yes" on the Application for Program of Education and Training form. Guidance may be obtained at the College by visiting the College Guidance Center.

*This does not apply to disabled Korean Veterans.

GENERAL ACADEMIC REGULATIONS

Admission Requirements

Admission to the School of Nursing

Transfer Students

Special Students

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Classification of Students

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Scholastic Requirements

Class Attendance

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Withdrawal From College

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Degrees and Graduation Requirements

Graduation With Honors

GENERAL ACADEMIC REGULATIONS

Admission Procedure

A student who wishes to enter The Agricultural and Technical College of North Carolina for the first time will be considered for admission if:

1. The student has graduated from high school with not less than 16 units of credit.
2. The student is transferring from another accredited college or university and is in good standing and has a cumulative average of "C" or above.
3. The student has graduated from an accredited college or university and wishes to enter the Graduate School.

Procedure for New Students

1. Write to the Registrar for an Admission Application. Fill it out properly and return it to the Registrar.
2. Arrange for the transcript of high school and/or college or university previously attended to be sent directly to the Registrar. All candidates for admission to the Freshman Class must take the Scholastic Aptitude Test. Out-of-state applicants must have graduated from an accredited high school and be in the upper two-thirds of their class.
3. After the completed application form, transcripts, and test results are received, they will be evaluated and, if approved, the student will receive a letter of admission and a permit to register. If the application for admission is not approved, the applicant will be notified accordingly with a statement about his deficiencies.
4. Each candidate for the Freshman Class, who is not a resident of Greensboro, is expected to arrive on the campus the day preceding the date designated on the College Calendar for Freshman Orientation. All freshmen should be present by 8:00 A.M. on the first day.

The *permit to register* furnished beforehand by the Registrar indicating the School or Department in which the applicant wishes to register must be ready for presentation to proper authorities. The dates indicated in the College Calendar for Freshman Orientation and Registration as well as those for upper-Classmen must be strictly observed. Those seeking registration after the scheduled date, must pay a late registration fee of \$5.00.

ADMISSION REQUIREMENTS

Entrance Units

High School graduates should present the following entrance credits, distributed as shown below:

<i>Subject</i>	<i>Number of Units</i>
English	4
*Mathematics	2
Social Studies (Preferably U.S. History)	1
Natural Science	1
Electives	8
<hr/>	
Total	16

The elective units may be selected from any other high school courses. However, students may not present more than two (2) units in activity courses, such as music and physical education, and not more than four (4) units in vocational courses.

Students who plan to major in science or business must have one unit of algebra and one unit of plane geometry.

Students who plan to major in engineering, mathematics and physics must have one and one-half units of algebra, one unit of plane geometry, and one-half unit of solid geometry.

Students who present sixteen (16) acceptable entrance units but do not meet the entrance requirements in mathematics listed immediately above must take special non-credit courses to meet these deficiencies before they enroll in any regular college courses in mathematics. This deficiency removal must begin immediately upon enrollment in the first year of study.

ADMISSION TO THE SCHOOL OF NURSING

Applicants for admission to the School of Nursing should write directly to the Dean, School of Nursing.

1. These applicants will receive special application forms and instructions.
2. These forms must be returned to the Dean, School of Nursing, and two transcripts of the high school and any college record must be sent directly from the school or college previously attended to the Dean.

*Students who plan to major in Nursing or Home Economics may enter with only one unit of mathematics.

3. In addition to the credentials mentioned above, all applicants are required to take the Pre-Nursing and Guidance Examination and must make a satisfactory score on this examination.
4. Upon receipt of the completed application form and the required credentials, the Dean of the School of Nursing will send to the applicant a schedule of dates and places where the Pre-Nursing and Guidance Examination may be taken. Successful candidates will receive their admission papers from the Dean, and other candidates will be informed as to why they are not admitted to the nursing program.
5. Candidates who fail the Pre-Nursing and Guidance Examination, but who present satisfactory high school records and pass the Scholastic Aptitude Test, may request that their application papers be transferred to the Registrar and request consideration for admission to another specified School of the College.

TRANSFER STUDENTS

1. Applications from transfer students cannot be considered until all credentials are received from the high school and each other institution previously attended. In addition, there must be a statement of good standing and honorable dismissal from these institutions.
2. Previous college records must show a cumulative average not below "C". Even with a cumulative average of "C" or above, no course is accepted in which a grade below "C" was originally earned.
3. Accepted courses are recorded to the student's credit, but grade points are not calculated on the transferred courses. The grade points for a transfer student are calculated only on the courses taken here and a student must do more than half of his required studies here in order to be considered an honor graduate.

SPECIAL STUDENTS

In exceptional cases, an applicant of mature years, with special training along particular lines or of long experience in special fields of knowledge, may be admitted to the college to pursue a non-degree program or to study certain subjects as special students. Even though they do not satisfy regular entrance requirements, such persons must submit evidence of ability to profit from such a program and must do a passing grade of work or forfeit the privilege accorded them. These persons must:

1. Request of the Registrar an application form, fill it in and return it with:

- (A) Records of previous educational experiences.
- (B) Other documentary evidence of ability to pursue the courses desired.
- (C) A statement of the applicant's objectives or purposes in pursuing studies chosen.

FILING OF CREDENTIALS

Applicants should take the proper steps to see that their credentials, (transcripts, etc.), are sent to the Registrar as early as possible, preferably not less than thirty (30) days before the beginning of the quarter in which they plan to enroll.

RE-ADMISSION OF FORMER STUDENTS

Former students who interrupted their studies for one or more quarters before graduation need not fill out another application form, but must write to the Registrar, properly identify themselves, and request re-admission except in cases of dismissal for disciplinary or scholastic reasons.

Students who were dismissed for scholastic reasons are to write to the Dean of Instruction and request processing for possible re-admission and await a reply with a permit to register before presenting themselves for registration.

Students whose attendance has been interrupted by the College for disciplinary reasons must apply to the Dean of Students if they wish a re-study of their cases for possible re-admission.

REGISTRATION

The registration dates for each quarter are listed on the college calendar at the beginning of this catalog. Students are urged to register promptly on the dates shown and avoid the penalty of paying the LATE REGISTRATION FEE of \$5.00.

The full payment of fees is a part of the registration process and no student is registered and entitled to go to classes until the prescribed fees are paid.

CLASSIFICATION OF STUDENTS

(Freshmen)

Graduates from high schools will receive entrance ratings according to the standing of their respective schools.

Every student, irrespective of the method by which he seeks admission, must present to the College through the principal of his former school, a transcript covering his entire record and a statement including the principal's estimate of his character.

All entering freshmen will be required to take placement tests in English and mathematics. All candidates for admission to the Freshman Class must take the Scholastic Aptitude Test. All who fail in the English examination will be assigned to a remedial course in English, (English 210). All who fail in the mathematics examination will be assigned to a remedial course in mathematics, (Mathematics 309).

(Sophomore)

To be classified as a sophomore, a student must have completed fifty hours of work open to freshmen and must have earned at least a "C" average. As a part, or in addition to this, the freshman courses in education, military science or physical education, and remedial English and mathematics must be completed. In addition, all admission deficiencies must have been removed.

(Junior)

To be classified as a junior, a student must have completed one hundred quarter hours of work required of sophomores, with at least a "C" average. No student will receive junior classification until all required freshman and sophomore courses have been completed.

(Senior)

To be classified as a senior, a student must have completed at least one hundred and fifty hours of required and major work, with at least a "C" average.

STUDENT LOAD AND SCHOLASTIC STANDARDS

The unit of credit is the quarter hour. A quarter hour represents one recitation or two laboratory periods per week for a quarter.

Full-time students are those who enroll for a minimum of twelve (12) hours of credit per quarter.

The maximum load a student may carry is twenty-one (21) hours per quarter, including non-credit courses or evening courses.

SCHOLASTIC REQUIREMENTS

Students are expected to earn and maintain a general average of at least "C", having a grade point average of 2.00 on the four-point (4.00) system shown on page 64.

(Grading System)

	93-100—A	
	82- 92—B	
	<i>Grade Points</i>	
93-100—A	Excellent	4
82- 92—B	Good	3
71- 81—C	Fair	2
60- 70—D	Poor, but Passing	1
Below 60—F	Failure	0
	W Withdrew	
	I Incomplete	

To continue at The Agricultural and Technical College, a student must meet the qualitative standards that are required. The qualitative averages are computed on work attempted and on a cumulative basis. The following graduated scale of cumulative grade point averages must be maintained to continue in college:

<i>Periods</i>	<i>Averages</i>
At the end of three (3) quarters	1.50
At the end of six (6) quarters	1.70
At the end of nine (9) quarters	1.90
At the end of twelve (12) quarters	2.00

Students will be placed on scholastic probation if these averages are not maintained. Should a student fail to raise his average appreciably during the quarter in which he is on probation, the student may be suspended from the College the following quarter. After one quarter's suspension, the student may return on probation, but failure to attain the minimum average required will result in permanent dismissal. The Dean of Instruction may, at any time, request the Registrar to deny a student the right to register in any quarter because of poor academic performance.

CLASS ATTENDANCE

It is the regulation of the College that teachers keep accurate records of class attendance. Regular and punctual attendance is required of all students. A student who fails to attend classes regularly may be subject to disciplinary action. The following regulations will be observed with respect to class attendance:

When a student is absent from class without approved excuse, more times than the number of quarter hour credits of the course, three (3) quarter hours will be added to his graduation requirements as a penalty. A student who receives a penalty for being absent in more than two classes will be dropped and will lose

credit for the quarter. The second time a student is dropped for being absent from class, he will receive a permanent dismissal from the College.

In order to receive credit for a course, a student must be present for two-thirds of the class session, regardless of excused absences. All excuses must be approved by the Dean of Students.

QUARTERLY EXAMINATIONS

A final examination will be required as a part of every course. An examination schedule showing time and place of meeting of each course and section will be published quarterly. Schedules so published will be followed without variation except by special permission of the dean of the school in which the course is offered.

CHANGES IN SCHEDULES

A change in a student's class program may be made only with the consent of the Dean of the School in which the student is enrolled. The student must obtain written permission from his Dean, stipulating the specific changes to be made, then report to the Office of the Registrar to execute the proper forms in making the change.

Students are allowed a period of one week at the beginning of each quarter for making these changes.

CHANGING SCHOOLS

Students may transfer from one School of the College to another with the written approval and acceptance of the Deans of the Schools involved. The proper forms on which to apply for such a change are to be obtained at the Office of the Registrar and executed at least six weeks prior to the beginning of the following quarter.

FAILURES

At the very first opportunity, a student must repeat a required course which he has failed, unless the Dean of his School authorizes a suitable substitute course. A course which is pre-requisite to another in a sequence must be passed before taking the next course in the series.

INCOMPLETES

Students are expected to complete all requirements of the particular course during the quarter in which they are registered. However, if at the end of the quarter, a small portion of the work remains unfinished and can be completed without further class attendance, the grade for the student may be reported "Incomplete", providing his standing in the

course is "Passing." For the student to secure credit, the work must be completed within one month after the beginning of the succeeding quarter in residence. Otherwise, the grade automatically becomes "F".

At the close of the quarter, each teacher will file with the Registrar a list of names of students who have received "Incomplete" grades together with a statement of all work required to complete the course before a final grade can be reported to the Registrar.

After registration has been completed in the following quarter, and it has been determined that a student has registered, both he and the teacher will be notified by the Registrar of the outstanding "Incomplete" grade and of the fact that it must be removed within the prescribed period.

WITHDRAWAL FROM COLLEGE

A student who wishes, or is asked to leave the College at any time during the quarter shall fill in and file official withdrawal forms. These forms are obtained at the Office of the Dean of Students. They should be completely executed in quadruplicate, (quintuplicate for veterans) and taken to the Bursar's Office. For failure to execute these forms, a student automatically incurs the penalty of receiving an "F" for each course in which he is enrolled that quarter.

HONOR ROLL

To encourage scholarship and integrity, the College publishes an Honor Roll at the end of each quarter. Regular students whose average grade in all courses is "B" shall be eligible for the Honor Roll.

DEGREES AND GRADUATION REQUIREMENTS

Graduation from the Agricultural and Technical College involves the satisfaction of the following requirements:

1. The candidate for a degree must have selected a specific curriculum, having the approval of the Dean of the School in which he is registered. This curriculum must have been completed.
2. Whether registered in Agriculture, Education and General Studies, or Engineering, he must complete at least 200 quarter hours and 400 grade points.
3. The credit hours must aggregate at least 200, including the required courses in military science and physical education. The grade points must equal 2 times the number of credit hours undertaken whether passed or failed. After securing 200 credit hours, if the student is deficient in grade points, he must take additional courses to secure these points. The student must ob-

tain an average of 2.00 or more in his major field. A minimum of one year of residence is required.

4. It is the aim of the institution to send forth men and women who are fit representatives. To this end, the College reserves the right to refuse to admit any student to the Senior Class or to graduate anyone who though qualified by class record may otherwise seem unfit.
5. Payment of diploma fee of five dollars (\$5.00) must be made to the Bursar on or before February 2, preceding graduation.
6. Students in the graduating class must clear all conditions by the end of the quarter preceding graduation.
7. Candidates for graduation must file an application for graduation upon the form provided in the Office of the Registrar at least four months prior to the date they expect to graduate.
8. Candidates for certificates in two-year or terminal programs are required to attain at least an over-all C average to fulfill requirements for graduation.

GRADUATION WITH HONORS

Graduation honors are awarded candidates who complete all requirements for graduation in accordance with the following stipulations:

- (1) Those who maintain a general average within the range of 3.00 to 3.24 will receive *Cum Laude*, (2) those who maintain a general average within the range from 3.25 to 3.49 will receive *Magna Cum Laude*, and (3) those who maintain a general average within the range of 3.50 to 4.00 will receive *Summa Cum Laude*. Publication of honors and scholarships is made at graduation and in the *College Catalog*.

DEGREES

All students successfully completing any of the four-year courses of study shall be entitled to the degree of Bachelor of Science.

1. Those graduating from a four-year curriculum offered in the School of Engineering shall be entitled to the Bachelor of Science degree in Architectural Engineering, Electrical Engineering, Mechanical Engineering, Engineering Mathematics, Engineering Physics, Business, Fine Arts, and Industrial Education.
2. Those graduating from a four-year curriculum in the School of Agriculture shall be entitled to the Bachelor of Science degree with majors in Agricultural Economics, Agricultural Education, Agricultural Engineering, Agronomy, Animal Husbandry, Bio-

logical Science, Chemistry, Dairy Husbandry, Home Economics, Horticulture, and Poultry Husbandry.

3. Students successfully completing a curriculum in the School of Education and General Studies shall be entitled to the degree of Bachelor of Science.
4. Those graduating from the four-year curriculum in the School of Nursing shall be entitled to the degree of Bachelor of Science in Nursing.

The Master of Science degree will be awarded those meeting requirements for same.

SCHOOL OF AGRICULTURE

*Department of Agricultural Economics and Rural
Sociology*

Department of Agricultural Education

Department of Animal Industry

Department of Biology

Department of Chemistry

Department of Home Economics

Department of Plant Industry

Department of Short Courses

SCHOOL OF AGRICULTURE

WILLIAM E. REED, *Dean*

The School of Agriculture is organized into the Departments of (1) Agricultural Education, (2) Agricultural Economics, (3) Animal Industry, (4) Biology, (5) Chemistry, (6) Home Economics, (7) Plant Industry, (8) Short Courses, and associated departments, consisting of state subject-matter, supervisory, and administrative personnel of (9) Agricultural and Home Economics Extension Service; and (10) Vocational Agriculture.

Requirements for Admission. The admission requirements of the School of Agriculture are the same as the general requirements for admission to the College.

Requirements for Graduation. The requirements for graduation for the Bachelor of Science Degree are as follows:

1. The student must have earned at least 200 quarter credit hours of acceptable course work that has a cumulative average quality of at least "C", and
2. The student must satisfy an approved program of study.

Curricula. The curricula of the School of Agriculture are designed to provide the students who pursue courses of instruction leading to the Bachelor of Science Degree (1) a fundamental understanding of the basic physical and biological sciences which are applied to their respective majors; (2) liberal educational experiences offered by the College; and (3) knowledge and competency required for specialization in any one of the major offerings.

Major Offerings. The major offerings are as follows:

1. Agricultural Business
2. Agricultural Education
3. Agricultural Science
4. Agricultural Technology
5. Biology (Professional Major)
6. Biology (Teaching Major)
7. Chemistry (Professional Major)
8. Chemistry (Teaching Major)
9. Home Economics Education
10. Institution Management
11. Nursery School Education

12. Clothing

13. Food and Nutrition

The freshman student who wishes to pursue either one of the four majors in agriculture will follow a uniform curriculum the first year. This curriculum is listed as follows:

UNIFORM FRESHMAN YEAR IN AGRICULTURE

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 211, 212, 213	5	5	5
Mathematics 311, 312	5	5	
Biological Sciences in Agriculture 111		3	
Physical Sciences in Agriculture 112	3		
Social Sciences in Agriculture 113			3
Chemistry 111, 112		5	5
General Botany 111 or Zoology 111			5
Education 211	1		
Physical Education	1	1	1
Military or Air Science	2	2	2
	—	—	—
	17	21	21

Beginning with the sophomore year the student should select one of the four majors, and, with the assistance of his faculty advisor, plan his courses of study for the sophomore, junior, and senior years. The courses selected must provide for broad educational development and competency in the area of specialization.

Agricultural Business. The Agricultural Business major is designed for those students interested in the business industry phase of Agriculture. Presently this segment of our economy employs approximately sixteen million people, representing about 25 per cent of those gainfully employed. The objective of the program of instruction in this major is to equip students for employment in those industries that furnish supplies and services to farmers and those that process, store, distribute, and merchandise the products of the farm. Graduates in this major are specially equipped for employment as salesmen, managers, public relations and technical supervisors with companies dealing with feed, seed, fertilizer, food processing and other such industries.

Students who major in Agricultural Business will be expected to develop high competency in the area of Economics, Business, and Agricultural Economics, including selected courses that form a progressive sequence, or a combination that satisfies logical objectives, in Agricultural Engineering, Animal Husbandry, Dairy Husbandry, Dairy Manufacturing, Poultry Husbandry, Horticulture, Agronomy, and Soils.

Agricultural Education. The Agricultural Education curriculum offers the student a program of study designed for developing competency in teaching and related types of work. The curriculum is especially suited for the student who aspires to become a teacher of Vocational Agriculture or Agricultural Extension.

The student who wishes to major in Agricultural Education should, preferably at the beginning of the sophomore year or before his junior year, plan with his faculty advisor a course of study which will meet the certification requirements of teachers of Vocational Agriculture in North Carolina. If he does not plan to teach Vocational Agriculture, he may qualify for graduation by satisfying other professional education requirements as approved by his departmental chairman and dean.

Agricultural Sciences. The Agricultural Sciences curriculum provides the student an opportunity to gain fundamental education and training for pursuing careers in the sciences essential to Agriculture. The objective of this program is to provide an opportunity for the student to develop competency in the scientific disciplines essential to graduate study and research.

The major in Agricultural Sciences may, in the beginning of the sophomore year, plan with his faculty advisor a program for specialization in one of the following areas: Agricultural Economics, Agricultural Engineering, Animal Husbandry, Dairy Husbandry, Poultry Husbandry, Horticulture, Farm Crops, Soil Science, and Dairy Products. The students program will include appropriate supporting courses in Biology, Chemistry, Physics, Engineering, and Mathematics.

Agricultural Technology. The curriculum in Agricultural Technology offers the student an opportunity to develop knowledge and skills in a specialized area of agricultural production. The program of instruction for the student who pursues this program places emphasis on the development of competency in the management and operation of commercial farms or in related fields that require specialized knowledge and technical skills.

The major in Agricultural Technology should, at the beginning of the sophomore year, plan in consultation with his faculty advisor courses of study for specialization in one of the following areas: Agricultural Economics, Agricultural Engineering, Animal Husbandry, Dairying, Poultry Husbandry, Horticulture, Agronomy, and Dairy Manufacturing.

Biology. Two curricula are offered leading to the Degree of Bachelor of Science in Biology. The Professional Curriculum is designed especially for the student who plans to study medicine, dentistry, veterinary medicine, or do graduate work and research.

The Teaching Curriculum is designed to prepare science teachers for secondary schools.

The Freshman program and course requirements for majors in Biology are listed in this Bulletin under the heading of the Department of Biology.

Chemistry. The Professional Major and the Teaching Major are offered leading to the Degree of Bachelor of Science in Chemistry.

The Professional major is for the student who plans to do graduate work and research and make a career in the field of Chemistry.

The Teaching Major is designed to develop competency in the area of Chemistry and in education for certification as science teachers in secondary schools.

The Freshman program and course requirements are outlined in this Bulletin under the Department of Chemistry.

Home Economics. Curricula leading to the Degree of Bachelor of Science in Home Economics are offered in the area of (1) Clothing, (2) Foods and Nutrition, (3) Home Economics Education, (4) Institution Management, and (5) Nursery School Education.

Outlines and curricula are carried in this Bulletin under the heading of Department of Home Economics.

DESCRIPTION OF COURSES BY DEPARTMENTS

GENERAL COURSES FOR AGRICULTURE MAJORS

111. Biological Science in Agriculture. Credit 3(3-0).

A study of contributions of the biological sciences to agriculture and how fundamental investigations in these areas have contributed in many ways to improved methods of production, marketing, processing, and distribution of plant and animal products.

112. Physical Science in Agriculture. Credit 3(3-0).

A comprehensive study of the contributions made by the physical sciences to the advancement of modern agriculture.

113. Social Sciences in Agriculture. Credit 3(3-0).

This course is designed to acquaint students with the economic, sociological, political, and historical background of American Agriculture. Production, consumption, and distribution problems of agricultural products, will also be considered.

121. Supervised Job Experience. Credit 9(0-45).

Designed to provide students pursuing the two-year terminal curricula with an apprenticeship experience in the special vocation they plan to enter. Each student required to spend a minimum of twelve weeks working full time in an approved job situation.

122. Supervised Job Experience. Credit 3(1-4).

Registration concurrently with 121; assigned reading; record of observations and personal experiences; personal evaluation of own work, and reports.

DEPARTMENT OF AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY

HOWARD F. ROBINSON, *Chairman*

The Department of Agricultural Economics and Rural Sociology offers courses in farm management, marketing, land economics, agricultural statistics, agricultural prices, financing and credit arrangements, agricultural legislation, and rural sociology.

Courses are designed to develop techniques for analyzing technical and social problems of agriculture to help prepare students for farming careers, and to lay a groundwork for those who wish to do graduate study.

The Department assumes major responsibility for guidance and counselling of students who major in Agricultural Business.

Employment opportunities:

Federal and State governments employ many agricultural economists for domestic and foreign research and educational work. There is also a good possibility for employment with business organizations as salesmen, purchasing agents, and marketing specialists. Opportunities for trained farm managers and farm operators are likely to increase as farming becomes more complex.

AGRICULTURAL ECONOMICS

122. Introduction to Agricultural Economics. Credit 4(4-0).

An application of the fundamental principles of economics to agricultural production, marketing, land tenure, leasing arrangements, financing and related economic problems.

123. Elements of Farm Management. Credit 4(2-4).

Principles which govern the effective organization and operation of the farm firm.

131. Marketing Agricultural Products. Credit 3(3-0).

Principles and practices of marketing as applied to farm commodities. Form, place, time and possession utility, the ultimate consumer's market, the agricultural industries market, the middleman system, exchange market operation and future contracts, price determination, reducing marketing costs and Federal Legislation as it applies to agricultural marketing. Visits will be made to local markets. Prerequisite: Ag. Econ. 122.

132a. Agricultural and Social Statistics. Credit 4(3-2).

Making use of Census data, statistical methods, Calculating machines used extensively. Prerequisites: Ag. Econ. 122, Econ. 231 or Soc. 231.

132b. Agricultural and Social Statistics. Credit 4(3-2).

This course is a continuation of 132a.

141. Farm Records and Accounts. Credit 3(2-2).

Methods and practices employed in taking farm inventories, filing income tax returns, receipts and expenditures, preparing financial statements. Single enterprise accounts and the use of farm accounts as a method of indicating the efficiency of farm operations. Prerequisite: Ag. Econ. 122.

142. Financing Agriculture. Credit 3(3-0).

Risks and uncertainty as applied to agriculture, the role of agricultural credit in a money economy, classification of credit, principles underlying the economic use of farm credit, primary lending agencies in North Carolina, and the growth of Federal Lending agencies in the farm credit field. Prerequisite: Ag. Econ. 122.

145. Land Economics. Credit 3(3-0).

Isolates land as a factor of production, historical implications of land policies in the United States, land classification, land utilization, rights in land and the extent of public land ownership. Prerequisite: Ag. Econ. 122.

146. Land Income. Credit 2(2-0).

Historic and present theories of rent, the role of the landlord, principles of land evaluation, appraisal and taxation. Prerequisites: Ag. Econ. 122, 145.

147. Cooperative Marketing. Credit 3(3-0).

Early cooperative movements, principles of cooperatives, importance of cooperatives in the United States, problems of organization, management and operation of cooperative endeavors by farmers in buying and selling. Prerequisites: Ag. Econ. 122, 131.

148. Agricultural Legislation. Credit 3(3-0).

The relationship between agriculture and government since the Northwest Ordinance of 1787 to the present; how this relationship has affected the farm business, price supports and other policy which has an impact upon agriculture. Prerequisite: Ag. Econ. 122.

149. Marketing Dairy Products. Credit 3(2-2).

Economic problems in procuring milk and cream, in processing and distributing fluid milk, cream and manufactured dairy products; marketing legislation, market news, market methods, including cooperation, consumer demand and price policy. Prerequisite: Ag. Econ. 131.

150. Farmer Movements. Credit 3(3-0).

A study of the history, formulation, and growth of the major farm organizations in the United States; the economic philosophy of these organizations and their methods of operation with respect to government. Prerequisite: Ag. Econ. 122.

Advanced Undergraduates and Graduates**501. Southern Resources in a Changing Economy—A Seminar.** Credit 3(3-0).

Trends and the formulation of economic and social problems in the South, and particularly in North Carolina; labor and capital mobility,

agriculture as compared with industry, the problem of underemployment, and important phases of current economic development. Prerequisites: Economics 231, Sociology 231 or Ag. Econ. 122.

502. Agricultural Policy. Credit 3(3-0).

The place of agriculture in a national and international economy; the impact of public policy on agriculture, an analysis of policy as it relates to the price support program, farm credit, international trade, aid to low income farmers, and resource development.

503. Farm Cost Accounts. Credit 3(2-2).

A study of records needed to determine the relative profitability of various agricultural enterprises, setting up and keeping running accounts of the farm business, interpretation and use of accounts in farm management.

504. Commodity Marketing Problems. Credit 3(3-0).

Economic problems arising out of the demand, supply, and distribution of specific agricultural commodities; the price making mechanism, marketing methods, grades, values, price, cost, and governmental policy. Not more than two commodities will be studied in any one quarter. Selection of commodities and emphasis on problem areas will be made on the basis of current need; commodities studied will be cotton, tobacco, fruits and vegetables, and grains. Prerequisite: Ag. Econ. 131.

505. Agricultural Prices. Credit 3(2-2).

Information regarding agricultural price changes, index numbers, price determination, seasonal and cyclical price movements, storage problems, and other methods of controlling extreme price fluctuations, government price policy.

506. Seminar in Marketing Farm Products. Credit 2(2-0).

Discussion, reports, consultation and research efforts which throw light on marketing problems of low income farmers in North Carolina, including National and International importance of locally grown products such as tobacco and cotton.

507. Advanced Agricultural Economics. Credit 3(3-0).

Methodology and the application of economic theoretical tools for analyzing problems in agriculture of domestic nature and also as regarding underdeveloped countries.

508. Special Problems in Agricultural Economics. Credit 3(3-0).

Designed for students who desire to work out special problems in the field of agricultural economics; problem definition and formulation; developing thesis proposals.

509. Advanced Farm Management. Credit 3(2-2).

Methods of research, plans, organization, and the application of principles as they relate to farm management. Part of the students' time will be spent on the College farm.

510. Seminar in Agricultural Economics. Credit 2(2-0).

Discussion, reports and an appraisal of current literature on agricultural problems. Consent of instructor.

RURAL SOCIOLOGY**131. Principles of Rural Sociology. Credit 3(3-0).**

Social systems, cultural patterns and institutional arrangements of people in rural environments in relation to those of towns and cities.

Advanced Undergraduates and Graduates**501. Rural Social Problems. Credit 3(3-0).**

Population, education, religion, health, land tenure, parity income, farm labor and mechanization, and housing.

502. Rural Leadership. Credit 3(3-0).

Opportunities and needs for rural leadership; educational and psychological requirements for various types of rural leaders.

503. The Rural Family. Credit 3(3-0).

The institutional nature of the rural family, etc., role in the community including its relations to educational, religious welfare and other community organizations.

504. Community Organization. Credit 3(3-0).

Planning and organizing educational, health, recreational and religious activities for rural people.

505. Rural Standards of Living. Credit 3(3-0).

Consumption behavior in the main community groups of our society.

506. Special Problem in Rural Sociology. Credit 3(3-0).

Work on a problem in rural sociology under the guidance of a member of the faculty.

DEPARTMENT OF AGRICULTURAL EDUCATION

C. E. DEAN, *Chairman*

The Department of Agricultural Education offers professional courses to prepare persons for teaching and related fields. The program has been designed to meet the certification requirements of vocational agriculture teachers in North Carolina. The Department offers courses leading to the Master of Science Degree in the field of Agricultural Education.

AGRICULTURAL EDUCATION**111. Orientation. Credit 1(1-0).**

Lectures and discussions designed to acquaint the student with the general field of agriculture. This course should acquaint him with many areas of the general field of agriculture, methods of studying, taking notes, and using the library.

137. Secondary Education in Agriculture. Credit 3(3-0).

The course is designed to acquaint the student with the historical objectives of vocational agriculture, the problems in the area and some solutions.

141. Materials and Methods of Teaching Vocational Agriculture. Credit 5(5-0).

Principles of teaching as applied to vocational agriculture; preparing lesson plans, and organizing teaching aids to meet community needs. Prerequisites: Education 222, Psychology 202 and 203.

142. Observation and Directed Practice Teaching. Credit 5(5-0).

Student will be required to spend eight weeks in an approved training center doing observation and directed practice teaching. Prerequisite: Agricultural Education 141.

143. Problems in Teaching Vocational Agriculture. Credit 5(5-0).

The discovery and analysis of problems in the field, program building, and evaluating instruction in vocational agriculture. Prerequisite: Agricultural Education 142.

Advanced Undergraduates and Graduates**500. Audio-Visual Aids in Vocational Agriculture. Credit 3(2-2).**

Techniques of preparing, using and evaluating audio-visual aids. It also includes the operation and adjustment of such equipment as projectors, recorders, film strip machines, and other units found in departments of vocational agriculture.

501a. Materials and Methods of Teaching Out-of-School Groups. Credit 3(3-0).

Methods and materials used in teaching young farmers and adult groups. Course includes developing various teaching devices and aids for instructing out-of-school groups. Prerequisites: Education 233, 237. Psychology 202, 203.

501b. Teaching Out-of-School Groups. Credit 3(3-0).

Organizing, planning, and teaching out-of-school groups; including working with community committees and organizations and evaluating the outcome with such groups. Prerequisite: Agricultural Education 501a.

502. Adult Education in Vocational Agriculture. Credit 3(3-0).

Principles and problems of setting up and directing adults with emphasis on conducting organized instruction.

503. The New Farmers of America. Credit 3(3-0).

The practices and procedures of setting up local, district and state organizations. Emphasis will be placed on training officers and members.

504. The Principles of Agricultural Education. Credit 3(3-0).

The principles and practices in agricultural education as revealed by research and new trends.

505. Guidance and Group Instruction in Vocational Agriculture. Credit 3(3-0).

Guidance and group instruction applied to agricultural occupations and other problems of students in vocational agriculture.

506. Problem Teaching in Vocational Agriculture. Credit 3(3-0).

Setting up problems for teaching unit courses in vocational agriculture.

507. Public Relations in Vocational Agriculture. Credit 3(3-0).

The means and methods of promoting and publicizing the local program of vocational agriculture.

Graduates Only

601. Administration and Supervision. Credit 3(3-0).

Administrative and supervisory problems of vocational agriculture, the practices and policies of local, state and federal agencies dealing with administration and supervision of vocational agriculture.

602. Program Planning in Vocational Agriculture. Credit 3(3-0).

Consideration is given to the community as a unit for program planning in agricultural education. Special emphasis on collecting and in-

terpreting basic data, formulating objectives, developing and evaluating community programs.

603. History of Vocational Agriculture. Credit 3(3-0).

A brief review of vocational education in Europe and America; special attention is given to vocational agriculture as it has developed in the United States.

604. Community Problems in Agriculture. Credit 3(3-0).

Finding the common problems of the community that relate to agriculture and developing solutions.

605. Public Relations in Agriculture. Credit 3(3-0).

The means and methods of promoting and publicizing local programs in agriculture.

606. Research in Vocational Education. Credit 3(3-0).

A research problem is developed under the supervision of the staff.

607. Philosophy of Vocational Education. Credit 3(3-0).

This course deals with the underlying philosophy and basic principles of vocational education. Emphasis is placed upon the factors contributing to the nature, purpose, scope, organization, and administration of the vocational education in agriculture.

608. Seminar in Agricultural Education. Credit 3(3-0).

Includes a review of current problems and practices in the field of agricultural education.

609. Methods and Techniques of Supervisors of Agricultural Education. Credit 3(3-0).

The course includes the common methods and techniques that should be used in setting up and supervising agricultural education on state and local levels. In addition, the course will include supervision of student teaching.

610a. Recent Developments and Trends in Agricultural Education. Credit 3(3-0).

The course includes an intensive treatment of the various subject matter fields to keep teachers up to date technically as well as professionally. It is designed to cover the developments and trends in agricultural education.

610b. Recent Developments and Trends in Agricultural Education. Credit 3(3-0).

A continuation of Agricultural Education 610a.

AGRICULTURAL AND HOME ECONOMICS EXTENSION**141. Principles of Extension Education. Credit 3(3-0).**

Background, development, and organization of the Agricultural and Home Economics Extension Service; principles underlying extension education; program building and techniques of teaching.

DEPARTMENT OF ANIMAL INDUSTRY

W. L. KENNEDY, *Chairman*

The Department of Animal Industry offers courses designed to meet the diverse interests of students by offering a choice of several options of study in which the students may specialize. Students wishing a major in Agricultural Sciences or Agricultural Technology may concentrate in either of the following fields of specialty: Animal Husbandry, Dairy Husbandry, Dairy Manufacturing, or Poultry Husbandry.

The specialized options of the students are particularly well suited to equip them as owners and managers of general farms where livestock is handled, for specialized types of dairy and poultry farming, and as instructors and investigators in Animal Industry.

Students who wish to specialize in the Department should follow the Uniform Curriculum in Agriculture for the freshman year. Programs for the sophomore, junior, and senior years will be under the supervision of a faculty advisor assigned by the head of the department.

A two-year terminal course in Animal Industry is offered for those students who plan to remain in college only two years.

ANIMAL HUSBANDRY**111. Breeds of Livestock. Credit 3(2-2).**

Breeds of farm animals with reference to their origin and development.

122. Types and Market Classes of Livestock. Credit 3(2-2).

The economic importance, classification and grading of cattle, sheep, swine, horses, and livestock products.

124. Swine Production. Credit 3(2-2).

The place of swine in the farm program; their selection, breeding, care and management.

131. Physiology of Domestic Animals. Credit 4(2-4).

Designed to acquaint students with structure and function of tissues, organs and systems of the animals.

132. Livestock Feeding. Credit 5(5-0).

Principles of feeding and the composition of feeds.

133. Diseases of Farm Animals. (Credit 3(2-2)).

The common diseases of livestock with reference to causes, prevention, and treatment.

134. Animal Breeding. Credit 3(2-2).

A study of the principles of genetics as applied to the improvement of farm animals, and some of the methods and problems of the breeder.

135. Beef Production. Credit 3(3-0).

Breeds of beef cattle, their selection, care, and management.

136. Sheep Production. Credit 3(2-2).

The place of sheep in the farm program; their selection, breeding, care, and management.

137. Livestock Marketing. Credit 3(2-2).

A study of the development of livestock markets, methods of marketing and seasonal trends will be considered. Field trips will be made to local livestock markets and slaughtering plants.

142. Farm Meats. Credit 4(2-4).

Meat production from a market standpoint with laboratory work in the slaughtering, curing, and marketing of meat products.

Special training in points of selection of farm animals.

144. Livestock Judging. Credit 3(1-4).

Special training in points of selection of farm animals.

Advanced Undergraduates and Graduates**501. Animal Nutrition. Credit 5(5-0).**

Metabolism of carbohydrates, fats, proteins and minerals; net energy values and application to new theories of feeding.

502. Seminar. Credit 1(1-0).

A review of current literature related to Animal Husbandry.

503. Special Problems. Credit 3(3-0).

Special assignments in the advanced phases of any of the lives of animal production and meats. Students will elect work in desired subjects after conference with the instructor in charge. Prerequisite: Three courses in Animal Husbandry.

513. Advanced Livestock Management. Credit 3(3-0).

Special work in problems dealing with feeding, breeding and management in the production of beef cattle, swine and sheep.

DAIRY HUSBANDRY**111. Principles of Dairying. Credit 3(2-2).**

The fundamental principles of dairying; type in dairy cattle; the composition of milk, its chemical and physical properties; sampling and testing of milk; selection and herd management.

122. Dairy Technology. Credit 3(2-2).

The composition of milk and milk products; study of the Babcock test for fat in milk and cream and use of modified Babcock test for fat in other dairy products. Prerequisite: Dairying 111.

123. Dairy and Food Plant Sanitation. Credit 3(2-2).

Principles and procedures, sanitary standards and regulations for milk and food products; equipment cleaning and detergents used for an effective job.

130. Dairy Plant Management. Credit 3(2-2).

The organization and management of a dairy plant; procurement of raw supplies; plant layout, equipment for plants, distribution of products, costs and operation, and record keeping.

134. Dairy Cattle and Milk Production. Credit 3(2-2).

Breeds of dairy cattle, their development, care and management.

140. Dairy Products Judging. Credit 2(0-2).

Standards and grades of dairy products; practice in judging milk, cream, butter and ice cream.

141. Dairy Management. Credit 3(1-4).

Designs and construction of dairy building; problems of economical milk production; fitting and showing dairy cattle.

142. Market Milk. Credit 3(2-2).

The Market Milk industry, milk ordinances, city milk supply, transportation, grading, pasteurizing, bottling, and distribution. Prerequisite: Dairying 111, 122.

143. Advanced Dairy Technology. Credit 4(2-4).

Theory of and practice in analytical methods used for control in dairy manufacturing plant. Prerequisite: Dairying 142.

144. Ice Cream Making. Credit 3(1-4).

The principles involved in the manufacturing of commercial ice cream and ices.

146. Dairy Plant Practice. Credit 3(0-6).

Assigned practice work at the college dairy and the milk and ice cream laboratories of the college dairy plant; given for both dairy manufacturing and dairy husbandry majors. Prerequisite: Three dairy subjects.

147. Dairy Breeds and Pedigrees. Credit 3(2-2).

A study of dairy pedigrees and breed families; official testing and dairy herd improvement, and association method.

148. Dairy Cattle Judging. Credit 3(2-2).

Characteristics of the dairy breeds and score-card requirements; relation of type, form and function to the value of selection. Practice judging.

Advanced Undergraduates and Graduates**501a, b. Dairy Seminar. Credit 1(1-0) ea.**

Assignment of papers on subjects relating to the dairy industry and methods in preparing such papers.

504. Special Problems. Credit 3(3-0).

Assignment of work along special lines in which a student may be interested, given largely by the project method for individuals either in Dairy Manufacturing or Dairy Husbandry. Prerequisite: Three dairy subjects.

POULTRY HUSBANDRY**111. Poultry Husbandry. Credit 3(2-2).**

The industry; origin and classification of breeds, selection, improvement and management of laying and breeding flocks.

112. Poultry Husbandry. Credit 3(2-2).

Incubation; brooding, housing, feeding, and management of young growing stock.

121. Poultry Plant Practice. Credit 9(0-20).

A laboratory course designed to develop and improve practical skills in poultry management and production.

122. Incubation and Hatchery Management. Credit 3(2-2).

A study of the operation of incubators and management of commercial hatcheries including sanitation, egg sources, hatchability, records and the National Poultry Improvement Plan. Prerequisite: Zoology 143.

123. Turkey Management. Credit 3(2-2).

History, origin, development and management of the turkey flock. Prerequisite: Poultry Husbandry 112.

131. Poultry Judging. Credit 3(2-2).

Standard and utility judging of fowls, selection and preparation for shows and organization and supervision of poultry shows, judging and laying contests. Prerequisite: Poultry Husbandry 112.

132. Poultry Nutrition and Feeding. Credit 4(3-2).

Nutritive requirements and metabolism of Poultry; feed ingredients, compounding rations and feeding standards for breeding, fattening, growing and producing stock. Prerequisite: Chemistry 134.

134. Poultry Anatomy-Physiology. Credit 3(2-2).

A course which deals with the structure and function of tissues, organs and systems of the domestic fowl. Prerequisite: Poultry Husbandry 112.

141. Poultry Diseases and Parasites. Credit 3(2-2).

Poultry hygiene; causes of diseases; symptoms and control of diseases and parasites. Prerequisite: Poultry Husbandry 134.

142. Poultry Farm Management. Credit 3(3-0).

Principles of farm management as applied to poultry production; records and factors influencing economic returns. Prerequisite: Poultry Husbandry 112.

143. Processing and Marketing Poultry Products. Credit 3(2-2).

Methods of killing, dressing, grading and storage of poultry meats and the grading and storage of eggs; transportation poultry products and factors influencing price. Prerequisite: Poultry Husbandry 112.

144. Poultry Breeding. Credit 3(2-2).

Inheritance of certain significant morphological and physiological characters in the fowl; systems of mating, breeding patterns, trap nesting, pedigrees and artificial insemination. Prerequisite: Zoology 142.

501. Poultry Seminar. Credit 1(1-0).

Special articles and reports on subjects relating to the poultry industry will be assigned each student with round table discussion.

Advanced Undergraduates and Graduates**502. Special Problems in Poultry. Credit 3(3-0).**

Problems in disease, nutrition, breeding, incubation and marketing.

DEPARTMENT OF BIOLOGY

ARTIS P. GRAVES, *Chairman*

The program of the Biology Department is designed to serve the needs of the college as a whole in the area of the biological sciences. The courses of instruction are organized to provide training necessary for specialization in agricultural sciences, home economics, nursing, horticulture, and the teaching of Biology. The Department also offers courses designed to meet the general education requirement of the college and for entrance into graduate, medical, dental and veterinary schools.

A student may earn the degree of Bachelor of Science in Biology by completing the minimum of 45 quarter hours in the major field. These credits should consist of the following courses: Zoology 111, 112; Botany 111, 121 or 131; Zoology 132 or Bact. 123; Zool. 123, 124, 132, 142, 143 and 144 or other courses permitting major credit. General Chemistry 111, 112, 113; Organic Chemistry 131, 132; Physics 311, 312, and Mathematics 311, 312.

A minimum of 30 quarter hours is required of persons who minor in Biology. Persons who plan to do their minor in Biology must meet the departmental requirements from the following courses: Zoology 111, 112; Botany 111, 121; Zool. 123, 143 and 4 to 5 hours electives in the field.

It is suggested that persons planning to apply for admission to medical school should pursue a major in Biology, or a major in Chemistry and a minor in Biology.

Students planning a vocation in teaching, but whose major emphasis is in Biology should consult the Head of the Department before completing their registration.

CURRICULUM IN BIOLOGICAL SCIENCE

Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Zoology 111, 112	5(3-4)	5(3-4)	.....
Botany 111 .....	.....	.....	5(3-4)
English 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Math. 311, 312	5(5-0)	5(5-0)	.....
History 210 .....	.....	.....	5(5-0)
Education 211	1(1-0)	.....	.....
Mil. Sci. 211, 212, 213	2(2-0)	2(2-0)	2(2-0)
Phy. Ed. 210a, 210b, 210c	1(0-2)	1(0-2)	1(0-2)
	19	18	18

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Botany 121, or 131 .....	.....	3(2-2)	.....
Bact. 123 or Zoology 122 .....	.....	5(3-4)	.....
Zoology 123	4(2-4)	.....	.....
Education 222 .....	.....	.....	3(3-0)
Chemistry 111, 112, 113	5(3-4)	5(3-4)	5(3-4)
English 220, 223	5(5-0)	5(5-0)	.....
History 221, or 222 .....	.....	.....	5(5-0)
Music 211 .....	.....	.....	2(2-0)
Military Science 221, 222, 223	2(2-2)	2(2-2)	2(2-2)
Phy. Ed. 220a, 220b	1(0-2)	.....	1(0-2)
	17	20	18

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Zoology 124	4(2-4)	.....	.....
Zoology 132 .....	.....	4(3-4)	.....
Zoology 142 .....	.....	.....	3(3-0)
French 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Chemistry 131, 132	5(3-4)	5(3-4)	.....
Sociology 231 .....	.....	.....	5(5-0)
Minor or free elective	3()	3()	3()
Art 314, 315, 316	2(2-0)	2(2-0)	2(2-0)
Phy. Ed. 220c .....	.....	.....	1(0-2)
	19	19	19

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Zoology 143, 144 .....	.....	4(2-4)	4(2-4)
Major electives	3( )	.....	.....
History 213	5(5-0)	.....	.....
Physics 311, 312 or *Physics 321, 322, 323	5(4-2)	5(4-2)	5(4-2)
Psychology 200	5(5-0)	.....	.....
Minor or free electives	5()	5()	5()
	18	14	14

BACTERIOLOGY**112. Microbiology. Credit 5(3-4).**

A survey of the principles and techniques of microbiology and immunology with special emphasis on their application to nursing.

*Pre-veterinary, pre-medical, and pre-dental students should enroll in Physics 321.

123. General Bacteriology. Credit 5(3-4).

A general course designed to study the morphology, physiology, and taxonomy of bacteria; a prerequisite to all other courses offered in bacteriology.

134. Food Bacteriology. Credit 4(2-4).

A study of the role of microorganisms in the preparation, preservation, and decomposition of various food products. Some consideration is given to the Public Health problem regarding the spread of some diseases from contaminated foods.

144. Dairy Bacteriology. Credit 4(2-4).

A general course which considers some of the common organisms associated with normal, and abnormal fermentations of milk; the role of microorganisms in the production and decomposition of various dairy products is also considered.

145. Soil Bacteriology. Credit 4(2-4).

The role of microorganisms in soil fertility. Special emphasis is on the activity of the nitrogen-fixing bacteria and also those concerned in the decomposition of organic waste materials.

501. Principles and Practices of Immunology. Credit 3(3-0).

In this course the fundamental mechanism of immunological reactions and their theoretical foundations will be studied. Selected lectures will deal with antigenic and chemical composition of certain microorganisms and methods of laboratory practice, including some clinical applications. Prerequisite: Bacteriology 123.

BOTANY**111. General Botany. Credit 5(3-4).**

Plants as living organisms constituting an integrated part of man's environments; general plant structure, general classification, evolutionary tendencies and living processes.

112. Plant Taxonomy. Credit 5(3-4).

The systematic organization of the plant kingdom; emphasis on identification and classification of important plant *genera* and families.

121. Elementary Plant Physiology. Credit 3(2-2).

The relationship between plant structure and various physiological processes; a general consideration of absorption, nutrition, respiration, growth and reproduction.

131. Plant Physiology. Credit 4(2-4).

An analysis of complex living processes occurring in plants and an attempt to explain them in terms of chemistry and physics.

133. Plant Pathology. Credit 3(2-2).

Basic factors governing the development of plant diseases including host-parasite relationships, effect of environment on disease development and the nature of disease resistance.

141. Cytology. Credit 3(1-4).

The structure and functional organization of protoplasm and its relationship to metabolism, heredity, and evolution.

Advanced Undergraduates and Graduates**504. Special Problems in Botany. Credit 3(3-0).**

Open to advanced students in botany for investigation of specific problems.

505. Plant Biology. Credit 3(3-0).

A presentation of fundamental botanical concepts to broaden the background of high school biology teachers. Bacteria, fungi, and other microscopic plants will be considered as well as certain higher forms of plants. This course will consist of lectures, demonstrations, projects, and field trips.

ZOOLOGY**110. General Zoology (for nurses). Credit 5(3-4).**

Lectures and laboratory procedures introductory to the field of animal life as it relates to the education of professional nurses. It will further give especial emphasis to the following areas of human development: origin and development of germ cells, fertilization and development, general structure and function of tissues, organ systems, and the basis of heredity.

111. General Zoology. Credit 5(3-4).

A general concept of the basic principles of Zoology and a brief survey of the animal kingdom. Various areas of animal biology are studied, including cellular organizations, classification, morphology, and physiology of representative forms from the protozoa through the phylum arthropoda.

112. General Zoology. Credit 5(3-4).

The continuation of Zoology 111 which gives the more fundamental training required of Biological Science Majors. Consideration is given to representative members of Mollusca, Echinodermata and Chordata, with more detailed emphasis on organ systems of frog, foetal pig and man.

121. Human Anatomy and Physiology. Credit 5(3-4).

A study of the general structure and function of the organ systems of man. The laboratory work shall consist of the dissection of the foetal pig and a study of the human skeleton. Required of Home Economics majors.

122. Invertebrate Zoology. Credit 4(2-4).

Comprehensive consideration of the morphology, function, phylogeny, classification and the life histories of representative forms of lower and higher invertebrate groups exclusive of insects. Prerequisites: Zoology 111, 112.

123. Comparative Anatomy of the Vertebrates. Credit 4(2-4).

A comparative study of chordate organ systems with rather detailed emphasis on the primitive vertebrates, and dogfish shark and the turtle. Prerequisite: Zoology 112.

124. Mammalian Anatomy. Credit 4(2-4).

Lectures and detailed laboratory dissections on the cat, dog, or foetal sheep and other related mammals as the basis for an understanding of human anatomy. Prerequisite: Zoology 123.

131. Human Anatomy. Credit 5(3-4).

Lectures, demonstrations and the laboratory study of manikins and the human skeleton. Organ systems of such mammals as the cat and pig are dissected and compared with conditions as they exist in man. This course is required of majors in Physical Education and the School of Nursing. Prerequisite: Zoology 111.

132. Histology. Credit 4(2-4).

An intensive study of the cell and cellular organization of the tissue and organs of various animals. Prerequisite: Zoology 112 or its equivalent.

133. Economics Entomology. Credit 4(2-4).

Elementary structure, life histories, classification, and control of insect pests and related arthropods. Recommended for students majoring in one of the agricultural sciences. Prerequisite: Zoology 111.

134. General Entomology. Credit 4(2-4).

Elementary structure, description, and habits of the principal orders of insects. Laboratory work will consist of collecting, mounting, preserving, and classification of principal insect representatives. Recommended for general science and biological science majors. Prerequisite: Zoology 111.

141a. Human Physiology. Credit 5(5-0).

Lectures and laboratory demonstrations of certain organ activity of common laboratory animals. This introductory course correlates these physiological principles with the performance of the integrated organ systems of the human. Prerequisite: Zoology 131.

141b. Human Physiology. Credit 5(3-4).

Lectures and laboratory exercises of certain organ activity of common laboratory animals. This introductory course correlates these physiological principles with the performance of the integrated organ systems of the human. Required of majors in the School of Nursing. Prerequisite: Zoology 131.

142. Genetics. Credit 3(3-0).

Principles and mechanism of inheritance in plants and animals.

143. Vertebrate Embryology. Credit 4(2-4).

Study of the developmental stages of selected vertebrates. The materials are treated comparatively and consist of amphibian, bird, rodent, and references to mammalian forms. Prerequisite: Zoology 123 or special consent of instructor.

144. Vertebrate Embryology. Credit 4(2-4).

Stresses variations in rodent and mammalian development and applications of experimental embryological procedures. Prerequisite: Zoology 143.

Advanced Undergraduates and Graduates**501. Special Problems in Zoology. Credit 3(3-0).**

Open to students qualified to do research in Zoology.

502. Mammalian Biology. Credit 3(2-2).

Study of the evolutionary history, classification, adaptation and variation of representative mammals with special emphasis on the prenatal variations in prototherian, metatherian and eutherian types. Prerequisites: Zoology 111 and Botany 111.

503. Biology of Sex. Credit 3(3-0).

Lectures on the origin and development of the germ cells and reproductive systems in selected animal forms. Prerequisites: Zoology 111, 112 or equivalent.

504. Cytology. Credit 3(3-0).

Study of the cell with lectures and periodic student reports on modern advances in cellular biology. Prerequisite: 132 or special consent of instructor.

505. General Microtechnique. Credit 4(2-4).

Designed to develop skills in the preparation of cells, tissues and organs for microscopic observation and study. Prerequisites: Zoology 111, 112 or equivalent.

506. Nature Study. Credit 3(3-0).

A study of diversified organisms, their habits, life histories, defenses, sex relationships, periodic activities and economic values designed to acquaint the student with fundamental knowledge that should lead to a fuller appreciation of nature.

507. Experimental Embryology. Credit 3(3-0).

A comprehensive lecture-seminar course covering the literature of experimental embryology and development physiology. Experimental studies treating with amphibian, chick and rodent development are designed as laboratory projects.

508. Animal Biology. Credit 3(3-0).

A lecture-demonstration course stressing fundamental concepts and principles of biology with the aim of strengthening the background of high school teachers. Emphasis is placed on the principles of animal origin, structure, function, development, and ecological relationships.

DEPARTMENT OF CHEMISTRY

GERALD A. EDWARDS, *Chairman*

The Department of Chemistry offers two major curricula leading to the Bachelor of Science degree. The curriculum of the professional major is designed to meet the needs of students planning either to begin professional careers in chemistry upon graduation, or to engage in further study in the field at the graduate level. The teaching major is designed to give the student a thorough foundation in chemistry while meeting the requirements for certification as a teacher at the secondary school level. This curriculum differs from the customary teaching major in that it also provides sufficient training to allow the student to do bonafide work at the graduate level in chemistry, as well as in education.

The two curricula are identical in the freshman and sophomore years. The student, therefore, need not reach a final decision regarding his choice of a profession until the beginning of his third year.

Professional Major. This program requires that the student complete 71* quarter hours in chemistry consisting of the following courses: 111, 112, 113, 115, 121, 122, 123, 131, 132, 133, 139, 140, 141, 142, 143, and

*Chemistry 115a, 115b, 139a, 140a, and 140b are required of all students who follow the normal chemistry sequence. Students who demonstrate exceptional ability in Chemistry 111 and 112 may omit from their course of study Chemistry 113 and go directly to Chemistry 121 if they pass a General Chemistry Proficiency Examination that will be administered by the department.

five quarter hours in chemistry numbered 145 or above. Other requirements of chemistry majors are the following: Mathematics 311, 312, 313, 321, 322, 323; English 211, 212, 213, 220 (or 223); German 211, 212, 213, 214; Physics 321, 322, 323; Botany 111; Zoology 111; Education 211; 15 quarter hours of social science (History 210, 222, and Economics 231 are recommended); and six quarter hours of physical education. While the College does not require a minor for graduation, the above requirements in mathematics are equivalent to a minor in that area. For graduation, a student must maintain a grade point average of 2.0 or more in his major field.

Teaching Major. The teaching major requires a minimum of 62* quarter hours credit in chemistry including Chemistry 111, 112, 113, 115, 121, 122, 123, 131, 132, 133, 141, 142, 143. Other requirements include Mathematics 311, 312, 313, 321, 322, 323; Physics 321, 322, 323; Botany 111; Zoology 111; German 211, 212, 213; Psychology 200, 202, 203, 204; Education 222, 224, 237, 249, 251; English 211, 212, 213, 220 (or 223); Geography 240; and six quarter hours of physical education. The mathematics requirements of this curriculum are equivalent to a minor. Students may elect about 10 quarter hours in other courses of their choice without exceeding the normal load. Persons completing this major sequence may be certified as chemistry, mathematics, or science (biology, chemistry, physics, or general science) teachers. A grade point average of 2.5 is required in chemistry courses in order to enroll in this curriculum.

Minor. A minor in chemistry requires a minimum of 35-40* quarter hours, consisting of the following courses: 111, 112, 113, 121, 122, 123, 131, 132.

PROFESSIONAL MAJOR CURRICULUM

Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112, 113	5(3-4)	5(3-4)	5(3-4)
English 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Math. 311, 312, 313	5(5-0)	5(5-0)	5(5-0)
Education 211	1(1-0)	.....	.....
Military or Air Science 211, 212, 213	2(1-2)	2(1-2)	2(1-2)
Physical Education 210a, 210b, 210c	1(0-2)	1(0-2)	1(0-2)
Chemistry 115a, b .....	.....	1(1-0)	1(1-0)
	<hr/> 19	<hr/> 19	<hr/> 19

*See note page 94.

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 121, 122, 123	5(2-6)	5(2-6)	5(2-6)
Math. 321, 322, 323	5(5-0)	5(5-0)	5(5-0)
German 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Military or Air Science 221, 222, 223	2(1-2)	2(1-2)	2(1-2)
Physical Education 220a, 220b, 220c	1(0-2)	1(0-2)	1(0-2)
	<hr/> 18	<hr/> 18	<hr/> 18

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 131, 132, 133	5(3-6)	5(3-6)	5(3-6)
Physics 321, 322, 323	5(3-4)	5(3-4)	5(3-4)
German 214	5(5-0)	-----	-----
Electives	-----	3()	3()
Botany 111, Zoology 111	-----	5(3-4)	5(3-4)
English 220 or 223	5(5-0)	-----	-----
Chemistry 139a, b	-----	1(1-0)	1(1-0)
	<hr/> 20	<hr/> 19	<hr/> 19

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 141, 142, 143	5(3-4)	5(3-4)	5(3-4)
Chemistry Electives	2-5	2-5	2-5
Electives	3-5	3-5	3-5
History 210, 222	5(5-0)	5(5-0)	-----
Economics 231	-----	-----	5(5-0)
Chemistry 140a, b	-----	1(1-0)	1(1-0)
	<hr/> 15 to 20	<hr/> 16 to 21	<hr/> 16 to 21

TEACHING MAJOR CURRICULUM

The Freshman and Sophomore years of the curriculum for those enrolled in the teaching major are identical with those for students enrolled in the professional major curriculum.

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 131, 132, 133	5(3-6)	5(3-6)	5(3-6)
Physics 321, 322, 323	5(3-4)	5(3-4)	5(3-4)
Psychology 200, 202, 204	5(5-0)	3(2-2)	3(2-2)
Education 222, 224	3(3-0)	3(3-0)	-----

Psychology 203* .....	.....	3(3-0)	.....
Botany 111 .....	.....	.....	5(3-4)
	18	19	18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 141, 142, 143	5(3-4)	5(3-4)	5(3-4)
Geography 240	5(5-0)	.....	.....
English 220 or 223	5(5-0)	.....	.....
Zoology 111 .....	.....	5(3-4)	.....
Education 237 .....	.....	.....	3(3-0)
Education 249, 251 .....	.....	5(5-0)	5(2-6)
Electives	3-5	3-5	.....
	18-20	18-20	13

COURSES IN CHEMISTRY

107. General Chemistry for Nurses. Credit 5(3-4).

Introduction to techniques and concepts in chemistry necessary for nursing students; includes writing and interpretation of symbols, for mular, equations; atomic structure; composition and reactions of matter.

108. General Chemistry for Nurses. Credit 5(3-4).

A continuation of Chemistry 107; includes an introduction to organic chemistry.

109. General Chemistry for Nurses. Credit 5(3-4).

A continuation of Chemistry 108; includes a study of the chemical changes taking place during life processes.

111. General Chemistry. Credit 5(3-4).

Introduction, elements, compounds, atomic structure, bonding, gases, and calculations.

112. General Chemistry. Credit 5(3-4).

Solids, liquids, solutions, electrolytes, oxidation-reduction and the halogens. Prerequisite: Chemistry 111.

113. General Chemistry. Credit 5(3-4).

The sulfur, nitrogen, carbon, alkali, and alkaline earth families, equilibrium, organic chemistry, metallurgy, and nuclear chemistry. Pre-requisite: Chemistry 112.

*If the student has completed Psychology 200, he may take Psychology 202 and 203 concurrently.

115a, b. Chemistry Orientation. Credit 1(1-0) each.

A series of weekly lectures and discussions on the nature and requirements of the chemical profession; the application of chemistry to modern living; and other selected topics.

121. Semimicro Qualitative Analysis. Credit 5(2-6).

Systematic analysis of cations, anions, simple compounds, ores, and alloys. Ionization theories, chemical equilibrium, and theory of oxidation-reduction. Prerequisite: Chemistry 113.

122. Quantitative Analysis. Credit 5(2-6).

Volumetric Methods of analysis, placing emphasis upon physico-chemical principles.

123. Quantitative Analysis. Credit 5(2-6).

Gravimetric and electrometric methods of analysis. Prerequisite: Chemistry 122.

131. Organic Chemistry. Credit 5(3-6).

Aliphatic compounds and their derivatives. Prerequisite: Chemistry 113.

132. Organic Chemistry. Credit 5(3-6).

Complex aliphatic compounds, introduction to aromatic compounds and their derivatives. Prerequisite: Chemistry 131.

133. Organic Chemistry. Credit 5(3-4).

Complex aromatic compounds and the systematic identification of organic compounds. Prerequisite: Chemistry 132.

139a, b. Current Trends in Chemistry. Credit 1(1-0) each.

A series of bi-weekly lectures and discussions on special problems in chemistry and of the chemical profession not covered in formal courses. The course will include introduction to the chemical literature.

140a, b. Current Trends in Chemistry. Credit 1(1-0) each.

A continuation of Chemistry 139, with increased student participation. Work will include a seminar in which students enrolled in Chemistry 145 will report progress in their research problems.

141. Physical Chemistry. Credit 5(3-4).

Atomic and nuclear structure, gaseous and crystalline states, physical properties and molecular structure, and the laws of Thermodynamics. Prerequisites: Physics 322, Math. 323, Chemistry 123.

142. Physical Chemistry. Credit 5(3-4).

Studies of the liquid state, solutions, chemical equilibria, and phase diagrams. Prerequisite: Chemistry 141.

143. Physical Chemistry. Credit 5(3-4).

A study of chemical kinetics, electric conductance, ionic equilibria, and colloids. Prerequisite: Chemistry 142.

145. Introduction To Chemical Research. Credit 3(0-6).

Makes use of the laboratory and library facilities in studying minor problems of research. Prerequisite: Advanced standing and permission of department. May be taken for credit during more than one quarter.

146. Dairy Chemistry. Credit 5(3-4).

An elementary study of the chemistry of milk and dairy products. Prerequisite: Chemistry 131.

147. Elementary Biochemistry. Credit 5(3-4).

A study of fundamental cellular constituents. Emphasis is placed on physiological applications and analyses. Prerequisites: Chemistry 132. Not accepted for credit toward a degree in chemistry.

148. General Biochemistry. Credit 5(3-4).

A study of the fundamental cellular constituents. Emphasis is placed on chemical composition and reactions. Prerequisites: Chemistry 123 and 133.

151. Advanced Inorganic Chemistry. Credit 2(2-0).

Atomic structures, electronic configuration of elements, periodic system, and some of the more recent theories in the interpretation of chemical reactions. Prerequisites: Chemistry 123 and 133.

152. Advanced Inorganic Chemistry. Credit 2(2-0).

Theories of acids and bases, and inorganic complexes, and special topics. Prerequisite: Chemistry 151.

153. Inorganic Preparations. Credit 1(0-2).

An advanced laboratory course. Emphasis is placed on preparation and purification of more complex inorganic compounds. Prerequisite: Chemistry 123 and 133. May be taken for credit during more than one quarter.

155. Radiochemistry. Credit 2(2-0).

A study of the fundamental concepts, processes, and applications of nuclear chemistry, including natural and artificial radioactivity, sources, and chemistry of the radio elements. This course is designed to supplement and accompany the theory offered in Chemistry 156 for advanced majors and others with sufficient background in Chemistry and Physics. Prerequisites: Chemistry 141 or Physics 340.

156. Radioisotope Techniques and Applications. Credit 3(1-4).

The techniques of measuring and handling radioisotopes and their use in chemistry, biology, and other fields. Open to majors and non-majors. Prerequisite: Chemistry 113.

161. Advanced Organic Chemistry. Credit 2(2-0).

Special topics in organic chemistry. Includes carbohydrates, Terpenes, Vitamins, Dyes and heterocyclic compounds. Prerequisites: Chemistry 123 and 133.

162. Organic Preparations. Credit 1(0-2).

An advanced laboratory course. Emphasis is placed on the preparation and purification of more complex organic compounds. Prerequisite: Chemistry 123 and 133. May be taken for credit during more than one quarter.

COURSES FOR SCIENCE TEACHERS**511. Inorganic Chemistry. Credit 3(3-0).**

A lecture course covering selected topics in Inorganic Chemistry; designed for science teachers having a limited background in Chemistry. Prerequisite: Chemistry 113. Not accepted for credit toward a degree in Chemistry.

512. Organic Chemistry. Credit 3(3-0).

A lecture course covering selected topics in Organic Chemistry; designed for science teachers with a limited background in chemistry. Prerequisite: Chemistry 113. Not accepted for credit toward a degree in Chemistry.

513. Advanced General Chemistry. Credit 3(3-0).

A lecture course in which the laws and concepts of chemistry are presented with greater depth and clarity than in customary general chemistry courses.

514. Recent Advances in Chemistry. Credit 3(3-0).

A lecture-demonstration course in which recent occurrences in the major branches of chemistry and chemical education are presented. The course includes a series of student seminars resulting from library research on topics considered in the class.

611. Modern Analytical Chemistry. Credit 5(4-1).

The theoretical bases of analytical chemistry are presented in detail. In the laboratory these principles together with a knowledge of chemical properties are used to identify substances and estimate quantities in unknown samples.

621. Elements of Organic Chemistry. Credit 5(4-1).

A systematic study of the classes of aliphatic and aromatic compounds and individual examples of each. Structure, nomenclature, synthesis, and characteristic reactions will be considered. Illustration of the familiarity of organic substances in every day life will be included. In the laboratory preparation and characterization reaction will be performed.

631. Principles of Physical Chemistry. Credit (5-1).

A review of the fundamental principles of physical chemistry, including the derivation of the more important equations and their application to the solution of problems.

641. Industrial Chemistry. Credit 5(5-0).

A review of the industrial production of chemical substances and the application of chemistry to various industrial processes.

645. Seminar. Credit 1(1-0).**646. Chemical Research. Credit 3-6(0-6 to 12).**

A course designed to permit qualified students to do original research in chemistry under the supervision of a senior staff member.

DEPARTMENT OF HOME ECONOMICS

MRS. C. V. EVANS, *Chairman*

The Department of Home Economics offers courses designed for curricula leading to the Bachelor of Science degree in the following subject matter areas: (1) Clothing, (2) Foods and Nutrition, (3) Home Economics Education, (4) Institution Management, and (5) Nursery School Education. Two-year terminal programs leading to a certificate are offered in (1) Clothing, and (2) Food Service Management.

The educational experiences which have been planned in the several curricula aim to contribute to the acquisition of knowledge, appreciation and skills for:

1. The development of better personal, group and family living for active participation in a democratic society, and
2. Earning a profitable living in one of the major areas offered by the Department.

Students who are enrolled in Institution Management 143, Nursery School Education 142, Clothing 140, Home Economics Education 153 or Home Economics Education 154 should be prepared to pay for room and board during the period they will be in off campus centers.

INTER-DEPARTMENTAL MINOR IN RECREATION LEADERSHIP

Inter-Departmental programs are designed to meet the needs of those students interested in the field of Recreational Leadership. The program cuts across departmental lines and utilizes the courses and resources of other departments and schools to balance and enrich the experiences for recreation minors.

Recreation Minor for Home Economics Education and Nursery Education Majors. The departments of Home Economics and Physical Education cooperate in an inter-departmental minor in Recreation. The schedule of courses is designed to meet the needs of individual students who desire a background of culture and recreational leadership skills that will enable them to enrich their family life or render distinct contributions to community projects.

TWO-YEAR TERMINAL PROGRAMS

CLOTHING

The two-year curriculum in clothing is developed to prepare students for employment as:

1. Dressmakers.
2. Managers or owners of small dress establishments.
3. Assistants in tailoring, dry cleaning, or millinery establishments.
4. Alterers of ready-to-wear garments.

Curriculum

First Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 211, 212	5	5	---
Art 317, 318	3	3	---
Secretarial Science 317, 318	---	2	2
Home Administration 111, 134	3	---	4
Home Economics Education 111	3	---	---
Clothing 110, 112	5	---	---
Clothing 113, 131	---	7	---
Clothing 114, 121	---	---	9
Clothing 136	---	---	3
Physical Education	1	1	1
	<hr/> 20	<hr/> 18	<hr/> 19

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Home Administration 135	5	---	---
Clothing 122, 151, 133	10	---	---

Foods and Nutrition 110	3	----	----
Institution Management 128	----	3	----
Clothing 134, 137, 152	----	10	----
Clothing 140	----	----	5
English 244	----	3	----
Electives	----	3-4	10
	—	—	—
	18	19-20	15

FOOD SERVICE MANAGEMENT

The two-year curriculum in Food Service Management prepares a student for the following positions:

1. School lunch managers and assistants.
2. Managers or owners of small food specialty shops.
3. Caterers.
4. Assistant supervisors in charge of food preparation.

Curriculum

First Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 211, 212, 244	5	5	3
Foods and Nutrition 110, 111, 112	3	4	3
Institution Management 101, 102, 103	5	5	5
Home Administration 111	3	----	----
Home Economics Education 111	3	----	----
Institution Management 123, 124	----	5	3
Institution Management 104	----	----	5
Physical Education	1	1	1
	—	—	—
	20	20	20

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Institution Management 121, 125, 128	15	----	----
Clothing 110, 112	5	----	----
Institution Management 122, 127, 129	----	11	----
Psychology 200	----	5	----
Institution Management 143	----	----	5
Secretarial Science 317, 318	----	2	2
Electives	----	2	10
	—	—	—
	20	20	17

FOUR-YEAR MAJOR CURRICULUM REQUIREMENTS

CLOTHING

The four-year curriculum in clothing is designed to meet the academic requirements necessary to enter the following professions:

1. College clothing or textile instructors after graduate study.
2. Managers or owners of dress establishments.
3. Fashion editors with newspapers or magazines.
4. Textile research workers.
5. Fashion designer's assistants after an approved apprenticeship.
6. Clothing specialists with the Cooperative Extension Service.
7. Milliners.
8. Couturieres.
9. Interior decorators.

Curriculum

First Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112, 113	5	5	5
English 211, 212, 244	5	5	3
Physical Education	1	1	1
Home Economics Education 111	3	---	---
Art 317	3	---	---
Clothing 110, 112, 113	2	3	4
Music 218	---	---	3
Child Development 115	---	---	3
Home Administration 112	---	3	---
	—	—	—
	19	17	19

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Zoology 111, 121	5	5	---
Foods 110, 111, 112	3	4	3
Clothing 122, 131, 121	5	3	4
Physical Education	1	1	1
English 224, 225	3	3	---
Clothing 136	---	---	3
Psychology 200	---	---	5
Art 318	---	3	---
Home Administration 134	---	---	4
	—	—	—
	17	19	20

Third Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Sociology 231, 241 .....	....	5	3
Economics 231, 236	5	3	....
Clothing 127	5	....	....
Clothing 132	5	....	....
Clothing 134, 137 .....	....	8	....
Clothing 133, 152	3	2	....
Physics 311 .....	....	....	5
Secretarial Science 317, 318 .....	....	2	2
Home Administration 121 .....	....	....	4
Electives .....	....	....	2-6
	18	20	16-20

Fourth Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Home Administration 143 or Elective	5	5	....
Industrial Arts 330 .....	....	3	....
Clothing 140 .....	....	....	5
Electives	10-15	5-9	10
History 234 .....	....	3	....
	15-20	16-20	15

FOODS AND NUTRITION

A major in Foods and Nutrition is designed to prepare graduates for professional opportunities as:

1. Assistant food technicians.
2. Clinical instructors.
3. Assistant clinical nutritionists.

Additional study on the graduate level will prepare the student for positions as:

Nutrition specialists
 Food specialists
 Public health nutritionists
 Food technologists
 Food editors
 College teachers
 and for
 Research in foods and nutrition.

Curriculum

First Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112, 113	5	5	5
English 211, 212, 214	5	5	3
Mathematics 311, 312, 313	5	5	5
Home Economics Education 111	3	---	---
Clothing 110, 112, 113	2	3	4
Child Development 115	---	---	3
	<hr/>	<hr/>	<hr/>
	20	18	20

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 121, 122, 123	5	5	5
Foods 110, 111, 123	3	4	5
Zoology 111, 121	5	5	---
Bacteriology 123	---	---	5
English 224, 225	3	3	---
Home Administration 121	---	---	4
Physical Education	1	1	1
Art 317	3	---	---
	<hr/>	<hr/>	<hr/>
	20	18	20

Third Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 131, 132, 147	5	5	5
Foods and Nutrition 125, 127, 128, 132	5	5	10
Economics 231, 236	5	3	---
Sociology 231	---	5	---
Physics 311	5	---	---
Psychology 200	---	---	5
	<hr/>	<hr/>	<hr/>
	20	18	20

Fourth Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Home Administration 112	3	---	---
Home Administration 143 and Elective	---	5	5
Foods and Nutrition 129, 130, 131	5	6	---
Home Economics Education 142, 141	---	---	10
Electives	10	8	3
Physical Education	1	1	1
	<hr/>	<hr/>	<hr/>
	19	20	19

HOME ECONOMICS EDUCATION

The four-year curriculum in Home Economics Education is designed to prepare graduates for positions as:

1. High school home economics teacher.
2. County Home Demonstration Agent.
3. College teacher of home economics education after graduate study.

Students desiring to secure certification for teaching home economics in North Carolina should meet the requirements for a second teaching area. Certification as a general science teacher may be obtained by electing five additional hours in either chemistry, physics, or biology.

Curriculum

First Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112, 113	5	5	5
English 211, 212, 244	5	5	3
Physical Education	1	1	1
Home Administration 112 .....	....	3	....
Home Economics Education 111	3	....	....
Art 317	3	....	....
Clothing 110, 112, 113	2	3	4
Music 218 .....	....	....	3
Child Development 115 .....	....	....	3
	—	—	—
	19	17	19

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Bacteriology 123 .....	....	....	5
Zoology 111, 121	5	5	....
Foods 110, 111, 112	3	4	3
Physical Education	1	1	1
English 224, 225	3	3	....
Home Administration 134 .....	....	....	4
Home Administration 121 .....	....	....	4
Psychology 200, 202	5	3	....
Education 222, 224	3	....	3
History 234 .....	....	3	....
	—	—	—
	20	19	20

Third Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Economics 231, 236	5	3	....
Physics 311 .....	....	5	....
Clothing 122	5	....	....
Psychology 203, 204	3	3	....
Education 237, 233 .....	....	3	3
Sociology 231, 241 .....	....	5	3
Child Development 133 .....	....	....	5
Home Economics Education 152 .....	....	....	5
Foods and Nutrition 125	5	....	....
Agricultural Education and Home Economics Extension 141 (for Ext. Ed. Majors) ....	....	....	3
	18	19	16-19

Fourth Year (Extension Service)

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Education 505, 506	3	3	....
Home Administration 143 or Elective	5	5	....
Home Economics Education 141, 142, 154 ....	....	....	15
Industrial Arts 330 .....	....	3	....
Electives	7-8	3	....
Art .....	....	3	....
	15-16	17	15

Fourth Year (Teaching)

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Home Administration 143, Art and Electives .	15	....	15
Home Economics Education 141, 142, 153 ....	....	15	....
	15	15	15

INSTITUTION MANAGEMENT

The four-year curriculum in Institution Management is developed to meet the academic requirements for active membership in The American Dietetic Association and entrance to dietetic internships approved by the Executive Board of the Association. A graduate will be qualified for the following professions:

1. Hospital dietitians after an approved internship.
2. College instructors of Institution Management after graduate study.

3. Managers and owners of Food Service establishments.

4. Assistant food directors in Collegiate Food Service Departments.

The Department will assist qualified students in securing internships and graduate fellowships.

Curriculum

First Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112, 113	5	5	5
English 211, 212, 244	5	5	3
Physical Education	1	1	1
Home Economics Education 111	3	....	....
Home Administration 112 .....	....	3	....
Art 317	3	....	....
Clothing 110, 112, 113	2	3	4
Child Development 115 .....	....	....	3
Music 218 .....	....	....	3
	—	—	—
	19	17	19

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Zoology 111, 121	5	5	....
Foods and Nutrition 110, 111, 123	3	4	5
Physical Education	1	1	1
English 224, 225	3	3	....
Psychology 200 .....	....	....	5
Economics 231, 236	5	3	....
Bacteriology 123 .....	....	....	5
History 234 .....	....	3	....
Home Administration 121 .....	....	....	4
	—	—	—
	17	19	20

Third Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 131, 132, 147	5	5	5
Foods and Nutrition 125, 127, 132	5	5	5
Accounting 301, 302, 303	3	3	3
Secretarial Science 317, 318	2	2	....
Foods and Nutrition 131	3	....	....
Institution Management 123, 124 .....	....	5	3
Electives .....	....	....	3-4
	—	—	—
	18	20	19-20

Fourth Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Institution Management 121, 122	5	5	....
Institution Management 125, 143	5	....	5
Foods and Nutrition 129	5	....	....
Home Administration 143 and Physics 311 ..	5	5	....
Electives .....	....	5-10	10
	—	—	—
	20	15-20	15

NURSERY SCHOOL EDUCATION

The four-year curriculum in Nursery School Education is developed to meet the needs of students who desire to become teachers or directors of nursery schools or kindergartens.

Curriculum

First Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112, 113	5	5	5
English 211, 212, 244	5	5	3
Physical Education	1	....	1
Home Administration 112 .....	....	3	....
Home Economics Education 111	3	....	....
Art 317	3	....	....
Clothing 110, 112, 113	2	3	4
Music 218 .....	....	....	3
Child Development 115 .....	....	....	3
	—	—	—
	19	16	19

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Zoology 111, 121	5	5	....
Foods 110, 111, 112	3	4	3
Physical Education	1	1	2
English 224, 225	3	3	....
Psychology 200	5	....	....
Education 222, 224 .....	....	3	3
Child Development 133 .....	....	....	5
History 234 .....	....	3	....
Home Administration 121 .....	....	....	4
	—	—	—
	17	19	17

Third Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Psychology 203, 204, 205	3	3	5
Nursery School Education 131, 132	6	----	----
Nursery School Education 133, 135	----	6	----
Home Economics Education 142	5	----	----
Economics 231, 236	5	3	----
Music 207	1	----	----
Sociology 231, 241	----	5	3
Clothing 121	----	----	4
Electives	----	0-3	5-10
	<hr/> 20	<hr/> 17-20	<hr/> 17-22

Fourth Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Nursery School Education 136, 141	9	----	----
Home Administration 143 or Electives	5	5	----
Electives	2-6	10-15	10
Nursery School Education 142	----	----	5
	<hr/> 16-20	<hr/> 15-20	<hr/> 15

CHILD DEVELOPMENT**115. Introduction to Child Development. Credit 3(2-2).**

Survey of the needs of children and how these needs are being met by the home, school and community. Observation with various age groups required.

133. Child Development. Credit 5(3-4).

A comprehensive study of the physical, social, emotional, personality and language development of the child from birth through adolescence.

CLOTHING

The minimum fees listed for clothing courses refer to the probable cost of materials necessary for the construction of personal garments.

110. Clothing Selection. Credit 2(1-2).

Selection of clothing for individual differences with emphasis on the elements of design and color.

112. Elementary Textiles. Credit 3(1-4).

Textile fibers, their source, characteristics and production into fabric, the social, economic and hygienic aspects and care of clothing.

113. Elementary Clothing Construction. Credit 4(1-6).

Fundamental principles of clothing construction based on the use of the commercial pattern. Minimum cost \$15.00.

114. Commercial Pattern Study. Credit 5(1-8).

A study of commercial patterns and probable variations in their design for garment construction. Minimum cost \$5.00.

121. Children's Clothing. Credit 4(2-4).

A study of children's clothing with emphasis on the selection and construction of functional garments. Minimum cost \$7.50.

122. Advanced Clothing Construction. Credit 5(2-6).

A consideration of the clothing needs of family members with laboratory experience to meet individual needs. Minimum cost \$15.00.

123. Textiles. Credit 3(2-2).

Continuation study of the physical and chemical properties of textile fibers and fabrics with emphasis on the continuous scientific and technological developments.

127. Home Furnishings. Credit 5(2-6).

Arrangement of home furnishings with emphasis on color, line and design; laboratory experience in construction principles of making slip-covers, draperies and other fabric furnishings. Prerequisite: H.A. 134. Formerly H.A. 135.

131. Historic Costume. Credit 3(3-0).

The history of costume and its adaptation to our modern dress.

132. Fitting and Pattern Study. Credit 5(2-6).

Partial drafting of a foundation garment from which an individual flat pattern is made. Minimum cost \$13.00.

133. Draping. Credit 3(1-4).

Draping and designing in the actual fabric on the form with emphasis on line, form and texture of fabric. Prerequisites: Clothing 131, Art 317.

134. Millinery. Credit 3(1-4).

An introduction to the use of various millinery equipment and materials. Minimum cost \$10.00.

135. Advanced Millinery. Credit 5(1-8).

Design and execution of more difficult millinery problems. Minimum cost \$10.00. Prerequisite: Clothing 134.

136. Costume Art. Credit 3(1-4).

Application of art principles to the development of original designs in clothing and accessories. Prerequisite: Clothing 131.

137. Tailoring for Women. Credit 5(2-6).

A study of the principles of tailoring as they apply to women's coats and suits; experiences in the handling of more difficult textile fabrics. Minimum cost \$20.00.

140. Field Experience in Clothing. Credit 5(1-28).

A course designed to give the student practical experiences on a commercial basis.

142. Special Problems in Clothing. Credit 5(1-8).

Individual work on special problems in clothing.

151. Jewelry and Metalwork. Credit 2(0-4).

Laboratory experiences in the designing and making of jewelry and other small objects. Minimum \$6.00.

152. Textile Design. Credit 2(0-4).

Fundamentals of textile design employing such methods as batik, stencil, block print, silk screen, paint and looms in making personal and household accessories.

153. Jewelry and Accessories. Credit 2(0-4).

Laboratory experiences in the use of various art media in the construction of jewelry and accessories.

FOODS AND NUTRITION

Students enrolling in food preparation classes should be prepared to secure not less than two uniforms.

110. Elementary Nutrition. Credit 3(3-0).

A study of the basic principles of nutrition in the maintenance of optimum health.

111. Food Preparation. Credit 4(2-4).

A study of the principles of food preparation necessary for obtaining a standard product.

112. Family Foods. Credit 3(1-4).

The application of the principles of nutrition and cookery to the planning, selection, preparation and service of the family's meals.

123. Nutrition and Dietetics. Credit 5(3-4).

A course concerned with the application of the scientific principles of nutrition to the planning of diets for various age groups.

125. Advanced Food Preparation. Credit 5(3-4).

Further study of the principles of food preparation with emphasis on the various methods of food preservation.

127. Meal Planning and Service. Credit 5(3-4).

Low and moderate cost food plans are made to meet the needs of different family groups with experiences in marketing, preparing and serving meals.

128. Child Nutrition. Credit 5(3-4).

A study of the principles of nutrition and their application to the feeding of children in family and nursery school groups.

129. Diet Therapy. Credit 5(3-4).

A study of dietary modifications necessary in the treatment of pathologic conditions. Prerequisites: Foods and Nutrition 123 and Zoology 121.

130. Recent Developments in Foods and Nutrition. Credit 3(3-0).

A study of recent research in foods and nutrition through discussion of reports in current scientific journals.

131. Nutrition Education. Credit 3(2-2).

A course designed to assist in the development of nutrition education programs in the school and community.

132. Experimental Cookery. Credit 5(2-6).

A study of the chemical and physical behavior of foods.

140. Special Problems in Foods and Nutrition. Credit 5(2-6).

Individualized work on special foods and nutrition problems.

HOME ADMINISTRATION

111. Essentials of Home Management. Credit 3(3-0).

A study of the problems involved in efficient home management.

112. Home Management. Credit 3(3-0).

Management and caring for the home including the utilization of family resources.

121. Health and Home Nursing. Credit 4(3-2).

Study of problems relating to family and community health; laboratory experiences in how to care for the sick in the home.

134. Housing. Credit 4(3-2).

A course designed to help the student to interpret architectural plans for homes; practical problems in the adaptation of rooms for more adequate use by the family.

143. Home Management Residence. Credit 5(5-12).

Application of managerial principles and performance of household skills as they relate to personal, group, and family living.

HOME ECONOMICS EDUCATION**111. Personal and Group Living. Credit 3(3-0).**

A course concerned with aiding in the solution of the immediate problems of personal and group living as the freshman girls find them at college and at home.

141. Demonstration Techniques. Credit 5(2-6).

The application of the principles of demonstration techniques in all phases of home economics.

142. Audio-Visual Techniques and Materials. Credit 5(2-6).

A course designed to give students practical experiences in the techniques of developing and using audio-visual materials in home economics.

152. Methods of Teaching Home Economics. Credit 5(5-0).

A course designed to acquaint the student with home and family life education in the elementary and secondary schools. Prerequisite: A 2.0 grade point average in major courses and a 2.0 grade point average in education and psychology courses.

153. Observation and Directed Teaching. Credit 5(2-6).

Experiences in conducting classes in off-campus teaching centers. A minimum of 6 weeks of teaching required.

154. Field Experience in Cooperative Extension Service. Credit 5(2-6).

Experience in County Home Demonstration work. Minimum time—6 weeks.

INSTITUTION MANAGEMENT**101. Institution Management Science. Credit 5(3-4).**

An application of the principles of science to the problems of institution management.

102. Institution Management Science. Credit 5(3-4).

Continuation of Institution Management 101.

103. Institution Management Science. Credit 5(3-4).

Continuation of Institution Management 102.

104. Institution Equipment. Credit 5(3-4).

Fundamental principles for planning and equipping small food service establishments.

121. Quantity Cookery. Credit 5(1-6).

The application of the principles of cookery to food preparation for group feeding; emphasis on work schedules, cost and portion control. Prerequisite: Foods and Nutrition 132.

122. Quantity Cookery. Credit 5(1-6).

A continuation of Institution Management 121.

123. Institution Organization and Management. Credit 5(5-0).

A study of the organization, management and administration of food service establishments.

124. Institution Organization and Management. Credit 3(3-0).

A continuation of Institution Management 123; emphasis on personnel management.

125. Institution Marketing. Credit 5(4-3).

A course in buying procedures for quantity purchases.

126. Institution Equipment. Credit 3(2-2).

A study of selection, specifications, records and care of equipment for large scale food preparation and service.

127. Catering. Credit 3(0-6).

A course to improve skills and techniques in food preparation for special occasions.

128. Cost Accounting. Credit 3(3-0).

A study of cost control records in food and clothing businesses.

129. School Lunch. Credit 3(3-0).

A study of organization and administration of school lunch programs.

140. Special Problems in Institution Management. Credit 3(3-0).

Individual work on special problems in institution management.

141. Planning and Equipping Food Service Departments. Credit 3(2-2).

A course for students interested in administrative positions; emphasis on planning and remodeling food service departments.

142. Readings in Institution Management. Credit 3(3-0).

A study of institution management through reports and discussions of articles in periodicals.

143. Field Experience in Institution Management. Credit 5(2-9).

Individualized experiences in off-campus food service organizations.

NURSERY SCHOOL EDUCATION**131. Play and Play Material for the Pre-School Child. Credit 3(1-4).**

Discussion of the importance of play in all aspects of child development. Experiences in developing creative art.

132. Literature for the Young Child. Credit 3(3-0).

A survey of prose and poetry for young children; criteria for the selection and age placement of stories.

133. Pre-school Music. Credit 3(1-4).

Acquisition of an initial repertoire of children's tunes; listening to songs and records for the pre-school child.

135. Pre-school Science. Credit 3(1-4).

A resumé of fundamental science concepts needed for the teachers' own background; study of science situations most frequently of concern to young children; specific practice in handling and initiating such situations.

136. Pre-school Testing. Credit 4(1-6).

Administering and interpreting test scores of the pre-school child.

138. Special Problems in Nursery School Education. Credit 5(2-5).

Individual work on special problems in nursery school education.

141. Kindergarten and Pre-school Methods. Credit 5(5-0).

Methods and materials in daily and long-range curriculum development to meet the needs of 2 to 5 year olds.

142. Directed Teaching in the Nursery School. Credit 5(2-6).

Directed teaching in a nursery school. Minimum time—6 weeks.

DEPARTMENT OF PLANT INDUSTRYSAMUEL J. DUNN, *Chairman*

The Department of Plant Industry offers courses in agricultural engineering, field crops, forestry, fruits and vegetable production, geology, and soils.

Curricula leading to the degree of Bachelor of Science in Agricultural Technology and Agricultural Science are offered in (1) Agricultural Engineering, (2) Agronomy, (3) Horticulture, and (4) Ornamental Horticulture.

These curricula are designed to provide scientific and technical experiences needed in such areas as general farming, extension work, teaching in agricultural high schools and colleges, specialized areas of crop production, business enterprises, and graduate study and research.

Students who wish to specialize in the Department of Plant Industry should follow the Uniform Curriculum in Agriculture for the freshman year. Two-year terminal curricula are offered in General Agriculture, Floriculture, Landscape Gardening, and Farm Mechanics.

AGRICULTURAL ENGINEERING**111. Agricultural Drawing. Credit 3(0-6).**

Lettering, use of instruments, multi-view projection drawing, auxiliary projection, selection views and dimensioning.

122. Farm Shop. Credit 3(1-4).

Proper use of tools, woodwork, bench and vise work, pipe fitting and concrete work.

123. Field Machinery. Credit 3(1-4).

Principles, operation, adjustment, and maintenance of farm field machinery.

124. Farm Buildings. Credit 3(0-6).

Fundamentals of building construction, applied to location, selection of materials, foundations and planning. Prerequisite: Ag. Eng. 111.

131. Surveying and Drainage. Credit 3(1-4).

Principles of surveying and drainage, planning of soil erosion and drainage systems, based on topographical and soil requirements. Prerequisites: Soils 123, Math. 311, 312.

132. Farm Power. Credit 3(1-4).

Principles of mechanical power, use, care and adjustment of internal combustion engines and electrical motors. Prerequisite: Phy. 311.

140. Dairy Engineering. Credit 3(2-3).

The general engineering principles of power selection, installation and maintenance, refrigeration and heat transfer as they apply to equipment used in the dairy industry. Also plant arrangement and management.

141. Rural Electrification. Credit 3(1-4).

A study of electricity, electrical wiring, and electrical devices, including motors, with particular emphasis upon the relation of these to the home and farm. Prerequisites: Physics 311, 312.

142. Water Supply and Sanitation for the Farm and Home. Credit 3(2-2).

The planning and installation of farm water and sanitation systems. Prerequisites: Ag. Eng. 122, Bact. 123.

Advanced Undergraduates and Graduates**500. Conservation, Drainage, and Irrigation.** Credit 3(1-4).

Improvement of soil by use of the study of conservation practices, engineering structures, drainage and irrigation systems. Prerequisite: A.E. 131.

501. Farm Shop Organization and Management. Credit 3(3-0).

A course designed for prospective and in-service teachers of vocational agriculture; includes presentation of purpose, plans, and equipment of shops, organization of course of study, and methods of teaching. Prerequisites: Ag. Eng. 122, Ag. Ed. 143.

502. Advanced Farm Shop. Credit 3(0-6).

Care, operation, and maintenance of farm shop power equipment. Prerequisite: Ag. Eng. 122.

503. Special Problems in Agricultural Engineering. Credit 3(3-0).

Special work in agricultural engineering on problems of special interest to the student. Open to seniors in Agricultural Engineering.

AGRONOMY**111. General Farm Crops.** Credit 3(2-2).

History, classification, distribution, culture and utilization of the important field crops. Identification of crops, crop seeds, and farm weed seeds.

121. Principles of Crop Production. Credit 3(2-2).

Factors affecting crop yields with emphasis on choice of crops and varieties, soil fertility and fertilizers, tillage and harvesting methods, and crop rotation.

123. Soils. Credit 4(3-2).

The general nature and properties of soils with introductory treatment of soils genesis, morphology and classification.

124. Forage Crops. Credit 3(2-2).

Grasses, legumes and other plants and their uses as hay, pasture, silage and special purpose forage; identification of plants and seed and study of quality in hay, silage and pasture population.

131. Hay and Pasture Crops. Credit 3(2-2).

Major problems connected with meadow and pasture establishment and management.

132. Soil Fertility. Credit 3(3-0).

General principles of soil fertility; the physical, chemical and biological factors affecting soil fertility and crop production.

134. Soils and Fertilizers. Credit 4(2-4).

Analytical and theoretical analysis of soils and fertilizers. Application of physics, chemistry and microbiology to the study of soil-plant interrelationships.

140. Soil and Water Conservation. Credit 3(3-0).

Social and economic aspects of soil deterioration and water conservation. Principles of land improvement as applied especially to humid regions.

141. Determining Crop Quality. Credit 3(2-2).

The recognition of high quality crop products as influenced by growth and maturity factors, weeds and diseases; determination of commercial quality through study of use and grades; identification of crops, weeds and diseases found in the U. S.; planning crop exhibits.

142. Soil Genesis and Classification. Credit 3(2-2).

Soil genesis, morphology and classification of the major soil groups of the United States and relation to soil management. Study of soil maps and soil survey reports.

Graduates and Advanced Undergraduates**501. Crop Ecology. Credit 3(3-0).**

The physical environment and its influence on crops; geographical distribution of crops.

502. Breeding of Crop Plants. Credit 3(2-2).

Significance of crop improvements in the maintenance of crop yields; application of genetic principles of techniques used in improvement of crops; the place of seed certification in the maintenance of varietal purity and production of quality seed.

503. Special Problems in Agronomy. Credit 3(3-0).

Designed for students who desire to work out special problems in crop production.

504. Special Problems in Soils. Credit 3(3-0).

Research problems for advanced students majoring in agronomy.

GEOLOGY**111. Physical Geology. Credit 4(2-4).**

Relation of geologic principles in the development of a balanced concept of the earth and earth history; identification of rocks and minerals; weathering, water and mineral resources; sediments, metamorphosis and volcanism; land forms.

HORTICULTURE**111. General Horticulture. Credit 3(2-2).**

An introduction to the basic principles underlying the production of fruits, vegetables, flowers, and ornamentals. Prerequisite: Botany 111.

112. Amateur Floriculture. Credit 3(2-2).

General principles of growing flowers on a small scale in the small greenhouse, home, school, and public buildings; growing flowers outside for landscape effect and cutting.

122. Fruit Production. Credit 3(2-2).

Principles and practices of tree fruit production, with emphasis on planting, soil management, pruning, spraying, pollination, harvesting, and storage. Prerequisite: Horticulture 111.

123. Greenhouse Construction and Management. Credit 4(2-4).

Location, maintenance, and operation of greenhouses. Emphasis on environmental controls, crop rotation, production problems, and business management. Prerequisite: Horticulture 111.

130. Plant Propagation. Credit 3(2-2).

Study of the types, construction, and management of propagation structures; fundamental principles of propagation by seed, cuttage, budding, graftage, and layerage. Prerequisite: Horticulture 111.

131a. Commercial Flower Production. Credit 3(2-2).

Culture of floriculture crops in the greenhouse and out-of-doors including cutflowers, pot plants, conservatory plants, and bedding plants. Special emphasis on seasonal operations. Prerequisite: Horticulture 111.

131b. Commercial Flower Production. Credit 3(2-2).

Continuation of 131a. Emphasis on seasonal operation and production of crops especially for the winter and early spring seasons.

131c. Commercial Flower Production. Credit 3(2-2).

Continuation of 131b. Emphasis on the production of seasonal floral-cultural crops in the greenhouse and outdoor bedding and border plants.

133. Vegetable Production. Credit 3(2-2).

Commercial vegetable production with special emphasis on large scale production, harvesting, and marketing of vegetables. Prerequisite: Horticulture 111.

134. Small Fruits. Credit 3(2-2).

The culture of strawberries, grapes, raspberries, blackberries, and other small fruits. Prerequisite: Horticulture 111.

135. Principles of Landscape Planning. Credit 3(2-2).

The fundamentals of design in planning the arrangement of small properties, such as the home, school grounds, small parks, and play grounds.

136a. Plant Materials and Landscape Maintenance. Credit 3(2-2).

Identification, merits, adaptability, and maintenance of deciduous shrubs, trees, and vines used in landscape planting; seasonal operations, such as lawns building, planting trees, shrubs, bulbs, and perennials. Prerequisite: Horticulture 130, 135.

136b. Plant Materials and Landscape Maintenance. Credit 3(2-2).

Continuation of 136a. Identification, merits, adaptability, and maintenance of evergreen trees, shrubs, ground covers, and vines used in landscape planting; seasonal operations, such as pruning, mulching, winter protection, and disease and insect control; selection and care of maintenance equipment.

136c. Plant Material and Landscape Maintenance. Credit 3(2-2).

Continuation of 135b. Identification of deciduous shrubs. Seasonal operations such as feeding trees, shrubs and lawns; spring pruning; planting bedding plants.

141. Nursery Management. Credit 3(2-2).

Planning, operations, and methods used by wholesale, retail, and landscape nurseries. Emphasis on cultural practices, records, and selling techniques. Prerequisite: Horticulture 130.

142. Flower Shop Management. Credit 3(2-2).

Planning, handling of merchandise, buying and selling methods, and general policies.

143a. Basic Floral Design. Credit 3(1-4).

Essentials of flower arrangement and plant decorations for the home, office, hospital, school and church.

143b. Advanced Floral Design. Credit 4(0-6).

Commercial designing of all types of arrangements commonly used in the retail flower shop. Prerequisite: Horticulture 143a.

144a. Landscape Design and Construction. Credit 3(0-6).

Problems in design of land areas with emphasis on orientation, arrangement, and circulation. Instruction in planning, presentation, cost accounting, and construction. Prerequisites: Horticulture 135, Agricultural Engineering 111.

144b. Landscape Design and Construction. Credit 3(0-6).

Continuation of 144a. Problems in design of larger land areas involving more complex features; practice in landscape model construction.

144c. Landscape Design and Construction. Credit 3(0-6).

Continuation of 144b. Problems involving grading plans, drainage systems, cost estimating, contract specifications, and construction.

501. Special Problems. Credit 2-5 hrs. -

Work along special lines given largely by the project method for advanced undergraduate and graduate students who have the necessary preparation.

DEPARTMENT OF SHORT COURSES

B. W. HARRIS, *Director*

The Department of Short Courses provides training in agriculture and home economics for persons who may not desire to follow a course which leads toward a degree. The department also plans and coordinates special educational meetings, conferences, workshops, and institutions for farmers, homemakers, ministers, and other interested persons.

Short courses are arranged for persons who may be interested in receiving specialized instructions for a limited period of time. It is the aim of these courses to increase the knowledge and improve the practices of people now engaged in agriculture, homemaking, and related occupations.

The two-year curricula leading to a certificate are offered in the following areas: (1) Animal Husbandry, (2) Clothing, (3) Dairy Husbandry, (4) Floriculture, (5) Landscape Gardening, (6) Poultry Husbandry, (7) Farm Mechanics, and (8) General Agriculture.

The two-year programs are designed to provide the student with a concentration of training and experience required for successful em-

ployment in one of the above areas. Emphasis is placed on technical training and practical experience for competence in a particular vocation rather than preparatory work leading to a degree. A student who wishes to pursue a degree program will receive credit for courses he has completed that are equivalent to those in the degree curricula, if he has met all college entrance requirements.

Request for short courses and information concerning arrangements should be directed to the DIRECTOR OF SHORT COURSES, SCHOOL OF AGRICULTURE, A. AND T. COLLEGE, GREENSBORO, NORTH CAROLINA.

TWO-YEAR PROGRAMS OF STUDY

Courses in the two-year programs of study will be scheduled in accordance with demand. Interested students are advised to contact the department chairman in order to arrange their class schedules.

ANIMAL HUSBANDRY

The two-year curriculum in Animal Husbandry is designed to prepare students for the following positions:

1. Livestock farm operators
 - a. Tenants
 - b. Owners
2. Herdsmen
3. Helpers in meat processing plants
4. Salesmen for feed and livestock supplies

Recommended Courses

<i>Course</i>	<i>Quarter Hours</i>
Animal Husbandry 111, 122, 124, 133, 134, 135, 136, 142, 144 .	28
Agronomy 131, 140	6
Agricultural Engineering 111, 113	6
Agricultural Economics 123, 131	7
Dairy Husbandry 111	3
English 211	5
General Agriculture 121, 122	12
Political Science 211	3
Poultry Husbandry 111	3
Physical Education 210a, 210b, 210c	3
Mathematics 311	5
Air or Military Science 211, 212, 213, 221, 222, 223	12
Electives	8

DAIRY HUSBANDRY

The two-year curriculum in Dairy Husbandry is designed to prepare students for the following positions:

1. Dairy farm operators
 - a. Owners
 - b. Renters
 - c. Helpers
2. Herdsmen
3. Salesmen for feed and dairy supplies

Recommended Courses

<i>Course</i>	<i>Quarter Hours</i>
Dairy Husbandry 111, 134, 141, 142, 146	15
Animal Husbandry 111, 134	6
Agricultural Engineering 111, 122, 124, 132	12
Agricultural Economics 123, 131	7
Agronomy 124, 131, 140	9
General Agriculture 121, 122	12
Physical Education 210a, 210b, 210c	3
Political Science 211	3
Poultry Husbandry 111	3
English 211	5
Air or Military Science 211, 212, 213, 221, 222, 223	12
Electives	14
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FARM MECHANICS

The two-year curriculum in farm mechanics is designed to prepare students for the following positions:

1. Farm shop operators
2. Farm repair services
 - a. Welding
 - b. Electrical wiring
 - c. Plumbing
 - d. Machinery and equipment
3. Assistants in sales and service programs
4. Farm equipment operators

Recommended Courses

<i>Course</i>	<i>Quarter Hours</i>
Agricultural Engineering 122, 124, 132, 141, 142	15
English 211	5
Mathematics 311	5
Agricultural Economics 123	4
Agricultural Education 111	1
Agronomy 121, 124	6
Physical Education 210a, 210b, 210c	3
Air or Military Science 211, 212, 213, 221, 222, 223	12
Electives	48
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FLORICULTURE

The two-year curriculum in floriculture is designed to prepare students for the following positions:

1. Greenhouse operators
 - a. Owners
 - b. Foremen
 - c. Helpers
2. Floral designer
3. Helpers in wholesale and retail flower shops
4. Salesmen

Recommended Courses

<i>Course</i>	<i>Quarter Hours</i>
Horticulture 111, 130, 131a, 131b, 131c, 135, 141, 142, 143a, 143b, 144a, 144b, 144c	40
Agronomy 23	4
Botany 111, 133	8
Agricultural Economics 123	4
Agricultural Engineering 111, 122, 123	9
Political Science 211	3
Physical Education 208, 213, 219, 220a, 220b, 220c	6
Air or Military Science 211, 212, 213, 221, 222, 223	12
Electives	11
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GENERAL AGRICULTURE

The two-year curriculum in general agriculture is designed to prepare students for the following positions:

1. General farm operators
2. General farm foremen
3. Skilled helpers

Recommended Courses

<i>Course</i>	<i>Quarter Hours</i>
Agricultural Education 111	1
Agricultural Economics 123, 141, 147	9
Agronomy 111, 121, 123, 124, 131, 132, 134, 140, 141	29
Dairy Husbandry 111	3
Agricultural Engineering 122, 123, 124	9
Animal Husbandry 111	3
Poultry Husbandry 111	3
Horticulture 133	4
Political Science 211	3
General Agriculture 121, 122	12
Physical Education 210a, 210b, 210c, 220a, 220b, 220c	6
Air or Military Science 211, 212, 213, 221, 222, 223	12
Electives	15
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LANDSCAPE GARDENING

The two-year curriculum in landscape gardening is designed to prepare students for the following positions:

1. Propagator and grower
2. Landscape gardener
3. Foreman—laborer—estate maintenance

Recommended Courses

<i>Course</i>	<i>Quarter Hours</i>
Horticulture 111, 122, 123, 130, 131, 131a, 135, 136a, 136b, 136c, 141, 144a, 144b, 144c	40
Agronomy 123	4
Agricultural Engineering 111, 122, 123, 124	12
Botany 111	5
Agricultural Economics 123	4
Political Science 211	3
Physical Education 208, 213, 219, 220a, 220b, 220c	6
Air or Military Science 211, 212, 213, 221, 222, 223	12
Electives	20
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POULTRY HUSBANDRY

The two-year curriculum in poultry husbandry is designed to prepare students for the following positions:

1. Poultry farm operators
2. Helpers in grading and processing plants
3. Salesmen in equipment, feed and supplies

Recommended Courses

<i>Course</i>	<i>Quarter Hours</i>
Poultry Husbandry 111, 112, 121, 122, 131, 132, 134, 141, 142, 143	37
Agricultural Education 111	1
Agricultural Engineering 111, 122, 124	9
Animal Husbandry 111	3
Agricultural Economics 123, 131	7
English 211, 212	10
General Agriculture 122	3
Political Science 211	3
Dairy Husbandry 111	3
Physical Education 210a, 210b, 210c	3
Air or Military Science 211, 212, 213, 221, 222, 223	12
Electives	8
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SCHOOL OF EDUCATION AND GENERAL STUDIES

Department of Education and Psychology

Department of English

Department of Foreign Languages

Department of Music

Department of Health and Physical Education

Department of Social Sciences

SCHOOL OF EDUCATION AND GENERAL STUDIES

LEONARD H. ROBINSON, *Dean*

The School of Education and General Studies offers to the student opportunities to prepare for teaching or for several distinct vocational and professional pursuits. The courses are constructed so that the student, although specializing, may also come in contact with subjects that possess wide cultural value and insure that broader outlook upon life which characterizes the educated man or woman. This school also offers professional courses in education and psychology required by the State Department of Public Instruction for the class "A" Teaching Certificate.

The School includes the following fields of study: air science, applied sociology, economics, education, English, foreign languages, military science, music, physical education, psychology, and the social sciences as well as subjects required for completion of the pre-law and pre-professional social work courses.

REQUIREMENTS FOR ADMISSION

Admission requirements for the School of Education and General Studies are the same as those given for entrance to the Freshman Class. See page .

GRADUATION REQUIREMENTS

A minimum of 200 credit hours and 400 grade points is required for graduation.

In addition to majors and minors, each candidate for graduation will be required to meet the following distribution requirements both as to subjects and hours:

1. Foreign language, 10 hours. (French, German, or Spanish) for those who present two admission units of high school credit in the same language. Others take the beginning courses.
2. Mathematics, 10 hours.
3. English composition, 15 hours; and literature, 5 hours.
4. Science, 10 hours of chemistry or physics; and 10 hours of biological sciences.
5. History of the Negro, United States History, History of Civilization, 5 hours each for a total of 15 hours.

6. Music and/or art 6 hours.
7. R.O.T.C., 12 hours. (Required for male students.)
8. Health and physical education, 7 hours (including H.Ed. 211).
9. Orientation, 1 hour.

The graduation requirements may be further classified under the following heads.

1. Required freshman-sophomore courses. These are the general college courses required in the School of Education and General Studies which must be completed before advancing to major work.

2. Major and Minor courses. Each student is required to select a major and a minor and complete a concentration in each. These will be selected at the end of sophomore year and completed during the junior and senior years.

3. Electives. The number of hours required for a major or a minor varies from department to department, but where a student has completed his required freshman-sophomore courses, his major and minor, and is still short of the two hundred hours required for graduation, he must complete a number of elective courses and hours sufficient to make up the deficiency.

All of the previously mentioned requirements will be adhered to rigorously. Students are urged to familiarize themselves with these requirements early in their college careers and follow them consistently in making out their schedules from quarter to quarter. Students should realize that while faculty advisers will be available and will be willing to assist them in adjusting curriculum and schedule problems, each student is responsible for the preparation of his own program of study.

REQUIRED COURSES FOR FRESHMEN AND SOPHOMORES

	<i>Hours</i>
English 211, 212, 213	15
English 220	5
Foreign language (one language 214, 215 or 211, 212, 213)	10-15
Mathematics 311, 312	10
History 210, 213; 221 or 222	15
Chemistry 111, 112 or Physics 311, 312	10
Personal Hygiene (H.Ed. 211)	1
Biological Science (Botany 111, Zoology 111)	10
Music and Art Appreciation	6- 9
R.O.T.C. 211, 212, 213, 221, 222, 223 (for men)	12
Physical Education, six quarters	6- 9
Orientation (Ed. 211)	1
Electives	5-10

SAMPLE SCHEDULE

The following are typical examples of how normal schedules might be arranged. Others more in accord with the student's interest and aptitudes might be selected:

Freshman

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Math. 311, 312	5(5-0)	5(5-0)	.....
French, Spanish or German 211, 212, 213 ..	5(5-0)	5(5-0)	5(5-0)
Ed. 211	1(1-0)	.....	.....
R.O.T.C. 211, 212, 213	2(2-2)	2(2-2)	2(2-2)
Physical Education	1(0-2)	1(0-2)	1(0-2)
Music 215, 216, 217			
or			
Art 314, 315, 316	2(2-0)	2(2-0)	2(2-0)
Elective .....	.....	.....	5
Personal Hygiene, H.Ed. 211 .....	.....	.....	1(1-0)
	21	20	21

Sophomore

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 220	5(5-0)	.....	.....
Chem. 111, 112, or Phy. 311, 312	5(3-4)	5(3-4)	.....
Bot. 111 .....	.....	.....	5(3-4)
Zool. 111 .....	.....	5(3-4)	.....
R.O.T.C. 221, 222, 223	2(3-2)	2(3-2)	2(3-2)
Physical Education	1(0-2)	1(0-2)	1(0-2)
Mus. 215, 216, 217, or Art 314, 315, 316 ...	2(2-0)	2(2-0)	2(2-0)
History 210, 213, 221 or 222	5(5-0)	5(5-0)	5(5-0)
Elective .....	.....	.....	5
	20	20	20

MAJORS AND MINORS

A student upon entering his third year is expected to concentrate in two definite fields of study. In arranging his work he must conform to the following regulations: (1) At least forty-five hours of the total number required for graduation must be chosen from a particular subject or field, in which he must maintain a satisfactory major grade point average. This will constitute the student's major group. (2) At least 30 hours must be chosen from another subject or field, in which he must maintain a satisfactory grade point average. This will constitute his

minor group. The major should represent the student's principal field of interest and the minor, his second field. Persons preparing to teach are advised to complete majors in two fields.

No student is permitted to major or minor in a subject until he has filled out and turned in to the dean of the School of Education and General Studies the special application form for majors and minors and has, thereby, received the written approval of the heads of the two subject-matter departments in which he proposes to concentrate.

Students must realize that the requirements for a state teaching certificate are set up and administered by the State Department of Public Instruction and not by the College. While the completion of a college major ordinarily carries with it more courses and credits than are needed for meeting the requirements for certification, those students planning to qualify for a teaching certificate should consult the requirements of their respective states and take care to see that the courses needed for out-of-state certificates are included in their programs. This is equally important for those desiring certification in the minor field also.

The following are suggested as fields for major study in this School:

1. English.
2. Foreign Languages.
3. Music.
4. Physical Education.
5. Social Science.
6. Applied Sociology.
7. History.

For a minor a student may elect Applied Psychology, Health Education, or any of the fields mentioned above.

ELECTIVES

In addition to minimum distribution requirements, and a major and a minor, which are required, each student is permitted to elect such additional courses as will be necessary to satisfy the graduation requirements. In so doing he is urged to exercise the greatest care in order that his choice may add further to the integration and coordination of his program. All such electives must be selected with the approval of the student's adviser.

The elective work may be taken in any of the departments indicated previously or from any other department of the institution subject to the approval of the Dean of the School of Education and General Studies.

Students are urged to elect courses according to a definite plan, and with a definite object in view. Those looking forward to teaching or working in small towns or rural districts should bear in mind that the number of trained workers in any given department is likely to be small and the facilities limited. They should therefore use their choice of electives to acquire knowledge or skills that will be of immediate use to them in such communities.

DEPARTMENT OF EDUCATION AND PSYCHOLOGY

CALVIN R. STEVENSON, *Chairman*

Courses offered by the Department of Education and Psychology are designed to serve the needs of the entire College in the areas of the professional education of secondary school teachers and the psychological education of students preparing for careers in high school teaching, social work, government service, and allied vocations. To achieve these objectives, the courses are organized to provide training in professional education and in psychology.

The Minor in Applied Psychology

The Department offers a minor in Applied Psychology to all students providing that they have completed the freshman and sophomore requirements of their school. Requirements for this minor include the successful completion of 34 quarter hours. A suggested sequence for the program follows.

SUGGESTED SEQUENCE FOR MINOR IN APPLIED PSYCHOLOGY

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Psychology 200	5(5-0)	.....	.....
Psychology 206 .....	.....	5(5-0)	.....
Psychology 205 .....	.....	.....	5(5-0)
	<hr/>	<hr/>	<hr/>
	5	5	5

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Psychology 201			
or			
Psychology 202	3(3-0)	.....	.....

Psychology 207	5(3-4)	.....	.....
Psychology 203	3(3-0)
Psychology 204	3(2-2)
Psychology 208			
or			
Psychology 209	5(5-0)
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	8	3	8

THE PROGRAM IN THE PREPARATION OF SECONDARY SCHOOL TEACHERS

The Department offers in cooperation with academic departments of the College, a program designed to prepare students to teach in the secondary schools of North Carolina or other states. The student must first complete the freshman and sophomore requirements of his school and the department offering his major. Before the end of the sixth quarter, students planning to enter the program will make application for admission on forms for that purpose available in the departmental office. Upon admission to the program, students will pursue courses in their major, their minor, the required professional courses in education, and required courses in psychology.

Courses in professional education and in psychology offered by the Department are organized around the three areas specified by the North Carolina State Department of Public Instruction, namely, "The Pupil", "The School", and "Teaching and Practicum". To meet professional requirements for high school certification in this state, students complete a minimum of nine quarter hours under the pupil and the school each and ten quarter hours under teaching and practicum. To meet academic requirements for high school certification, they must complete specified numbers of quarter hours in the two areas in which they plan to teach (normally, the major and minor fields of specialization).*

Requirements for Admission

Applicants for unconditional admission to the Program in the Preparation of Secondary School Teachers shall be required to meet the following requirements as determined by the Departmental Admission and Retention Committee:

1. Overall grade point average of 2.00 or better.
2. Satisfactory status with respect to the Kuder Preference Record, the Bell Adjustment Inventory, and the Cooperative Test of Reading Comprehension or such other tests in these areas administered during the Freshman Orientation Program.

*Information on the number of hours required in each academic area are available in the office of the Department of Education and Psychology.

3. Satisfactory status with respect to the Aptitude for Teaching—Subtests of the Flanagan Aptitude Classification Test (FACT 8 and FACT 4) administered each Spring Quarter for prospective applicants or applicants to the program.

Requirements for Retention

To be retained in the program, students will be required to:

1. Achieve a satisfactory score as determined by the Departmental Admission and Retention Committee on a comprehensive examination in English fundamentals.
2. Maintain a grade point average of 2.00 in the professional education sequence and in the academic sequences.

Suggested Professional Sequence

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Education 222. Introduction to Study of Education*†	3(3-0)	.....
and or			
Psychology 202. Adolescent Psychology††	3(2-2)

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Education 224. Philosophy of Education* ..	3(3-0)	.....	.....
Psychology 203. Educational Psychology†	.....	3(3-0)	.....
Guidance 501. Introduction to Guidance†	.....	.....	3(3-0)
Psychology 204. Tests and Measurements†	.....	.....	3(2-2)

Senior Year—The Professional Quarter

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Education 237. Principles of Secondary Education*	3(3-0)	3(3-0)	3(3-0)
Education 243, 245, 246, 247, 248, or 249.			
Methods of Teaching**	5(5-0) or 5(5-0)	5(5-0) or 5(5-0)	5(5-0)
Education 251. Observation and Practice Teaching**	5(5-0)	5(5-0)	5(5-0)
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*Courses under *The School*.

†Courses under *The Pupil*.

‡Open to all sophomores, juniors or seniors whether preparing to teach or not.

**Courses under *Teaching Practicum*.

NOTE: Persons interested in securing a teaching certificate in the schools of North Carolina should contact the Supervisor of Certification, Division of Professional Service, State Department of Public Instruction, Raleigh, N. C., on forms available for that purpose in the Office of the Registrar.

DRIVER EDUCATION

ISAAC BARNETT, *Instructor*

210. Driver Education. Credit none.

Designed to teach traffic and automobile operations to beginning drivers, common practices of safe driving, the essential knowledge of automobile operations and directed driving.

212. Teacher Training Driver Education. Credit 3(3-3).

This course is designed to give students who have state driver's license the necessary training and practice to become professional driver teachers.

NOTE: This course is approved by the American Automobile Association.

COURSES IN EDUCATION

Undergraduate

211. Orientation. Credit 1(1-0).

Lectures and discussions designed to provide the student with functional insight into methods of improving study, taking notes, and using the library. Any quarter of the Freshman year.

222. Introduction to the Study of Education. Credit 3(3-0).

Overview of the historical background of the systems of education in the United States, their aims, organization and procedures, and of the principles and practices on all levels of the American educational system. Consideration given to qualifications for teaching with emphasis on the requirements of North Carolina.

224. Philosophy of Education. Credit 3(3-0).

View of the educative process, in the light of biology, psychology, and sociology, with emphasis on the philosophical bases and implications as they relate to the pupil, curriculum, teacher, and the institution. Prerequisite: Ed. 222.

225. Audio-Visual Education. Credit 3(2-2).

Practical experiences in the operation and maintenance of projectors and recorders.

226. Audio-Visual Materials Production. Credit 3(0-6).

This course is designed to help students develop basic skills in the principles of production of graphics (posters, charts and the like), models, mock-ups, slides, motion pictures and recordings for use as mass media of communications, of interest to prospective teachers and all students who are desirous of acquiring a basic knowledge and understanding of mass media of communications as an avocation or vocation.

236. Public School Music Methods. Credit 3(3-0).

A comprehensive course covering materials and methods in the public schools. Fall.

237. Principles of Secondary Education. Credit 3(3-0).

History, nature and function of the secondary school and its relationship to the elementary school and adult life. Prerequisite: 15 quarter hours in Education and Psychology.

242. The Teaching of Physical Education. Credit 3(2-2).

Materials, methods, and practice in planning, organizing, and conducting physical education class activities. Prerequisites: 239 and an adequate number of other physical education courses.

243. Methods of Teaching English. Credit 5(5-0).

Study of materials and methods of teaching English in the high school. Required of those planning to teach English. Prerequisites: 40 hours of English and 18 quarter hours in Education and Psychology.

244. Band Methods. Credit 5(5-0).

School band organization and administration. Winter.

245. Methods of Teaching Social Sciences. Credit 5(5-0).

Designed to provide the student with an understanding of the place of social sciences in high school and to assist him in understanding the techniques of social science instruction on the high school level. Required of those planning to teach the subject. Prerequisites: 40 hours of Social Studies and 18 quarter hours in Education and Psychology.

246. Methods of Teaching Mathematics. Credit 5(5-0).

Deals with evaluation of subject matter, materials, methods and techniques, and objectives in the teaching of mathematics in the junior and senior high school. Required of those planning to teach the subject. Prerequisites: 30 hours of Mathematics and 18 hours of Education and Psychology.

247. Methods of Teaching Foreign Languages. Credit 5(5-0).

Study of the problems and difficulties experienced in teaching foreign languages. Special attention is given to the matter of classroom aids, equipment, etc. Required of those students planning to teach languages. Prerequisites: 40 hours of French and 18 quarter hours of Education and Psychology. Fall.

248. Methods of Teaching Art. Credit 5(5-0).

Aims, objectives, methods and techniques of art teaching in the modern school. Special attention given to planning courses of study, presentation, selection of equipment, reference and illustrative material and correlation. Required of those wishing to qualify as art teachers. Prerequisites: 45 hours of Art and 18 hours of Education and Psychology.

249. Methods of Teaching Science. Credit 5(5-0).

Study of methods, materials and techniques of teaching such subjects as biology, chemistry, physics, and general science in the high school. Required of all those planning to teach in this field. Prerequisites: 40 hours of Science and 18 quarter hours of Education and Psychology.

250. Evaluation in Health and Physical Education. Credit 3(3-0).

A critical study of ways and means of evaluating biological, social and psychological outcomes of programs of health and physical education. An analysis is made of the various tests and standards used in school. Spring.

510. Library Usage for Classroom Teachers. Credit 3(2-2).

A course designed to meet the needs of pre-service and in-service teachers in the study, collection, organization and graduation of instructional materials for educational materials centers at all grade levels. The course also included methods and techniques for library usage for pupils and teachers, central library organization, library requisition practices, and library-classroom coordination of the instructional program.

Graduate

601. Theory of American Public Education. Credit 3(3-0).

Objectives, organization, development, administration, support and control of public education in the State.

605. Principles of Teaching. Credit 3(3-0).

A study of the status of teaching as a profession in the United States; teacher obligations, responsibilities and opportunities for leadership in the classroom and community with special emphasis on principles of and procedures in teaching.

606. The Curriculum. Credit 3(3-0).

An examination of the basic principles and problems of the curriculum and teaching including scope of educational experiences and opportunities essential for a good rural program on different levels.

607. History of American Education. Credit 3(3-0).

A study of the historical development of education in the United States emphasizing educational concepts and practices as they relate to political, social, and cultural developments in the growth of a system of public education.

608. Philosophy of Education. Credit 3(3-0).

A critical study of and a philosophic approach to educational problems. The nature and aims of education in a democratic society, relation of the individual to society, interests and discipline, play and work, freedom and control, subject matter and method.

609. School Planning. Credit 3(3-0).

An examination of the principles governing the selection and landscaping of school grounds, location and design of buildings, and care of plant from standpoint of use, sanitation, health, and attractiveness.

611. Audio-Visual Aids Programs. Credit 3(2-2).

Recognizing, planning and organizing for the possible use of audio-visual aids as enriching experiences for students as participants in the informal type of classroom program evolving out of a unit of instruction.

251*. Observation and Practice Teaching. Credit 5(2-6).

Designed to provide the student with an opportunity to put to use methods, techniques, and materials of instruction in a real classroom situation under supervision. Course involves purposeful observation; organization of teaching materials; participation in other activities which will aid in developing a teacher (guidance activities, child accounting, co-curricular activities, parent-teacher associations, teachers meetings, and the like); and, ninety or more clock hours of actual teaching. Prerequisites: overall G.P.A. of 2.00, G.P.A. of 2.00 in both the professional sequence and the academic sequences (major and minor areas of specialization and Ed. 237. Principles of Secondary Education and Ed. 242, 249. Methods of Teaching . . . completed or taken concurrently. Maximum load, including Ed. 251, is 13 quarter hours.

Advanced Undergraduate and Graduate**505. Introduction to Adult Education. Credit 3(3-0).**

History, philosophy, and general organization and administrative problems of adult education. Prerequisite: Psy. 203. Fall and Spring.

506. Methods in Adult Education. Credit 3(2-2).

Methods of informal instruction, group leadership, conference planning, and techniques in handling various issues of interest to adults. For persons preparing to conduct adult education programs as well as those preparing to serve as instructors or leaders in the public schools and/or in various agencies serving adults. Prerequisite: Ed. 506. Winter.

612. Methods and Techniques of Research. Credit 3(3-0).

Careful analysis and study of research problems; techniques and methods of approach.

613. Problems of Rural Education. Credit 3(3-0).

Designed for administrators and teachers on utilizing the environment for vitalizing elementary and secondary instruction. Concerned with the major issues and problems confronting Rural Education along with their education implications.

*200 series courses numbers 224 or above are restricted to students formally admitted to the program for the preparation of secondary school teachers.

615. Problems and Trends in Teaching Social Sciences. Credit 3(3-0).

Survey of major problems in the broad field of Social Studies and consideration of improved ways of presentation and class economy, including lesson plans, assignments, visual aids, and other means of facilitating learning.

616. Problems and Trends in Teaching Science. Credit 3(3-0).

Attention to major problems of the high school teacher of Science. Lesson plans, assignments, tests, etc., constructed and administered by each student in class. Visual aids, demonstrations and laboratory techniques carried out.

618. Childhood Education. Credit 3(3-0).

A course designed to provide a comprehensive analysis of physical, mental, emotional, and social growth from birth through adolescence; a study of the developmental tasks associated with stages of human development; and, an examination of their implications for the determination of instructional goals, the selection and organization of learning experiences, and the evaluation of pupil progress.

623. Educational Sociology. Credit 3(3-0).

The place and functions of education in a democracy. All the major phases of education given consideration. Such topics as the following included: democracy and education; the teaching staff; the relation of federal government to education; adult education; vocational education; special education; guidance; education and crime; the press, motion pictures, and the radio in education.

624. Elementary School Administration. Credit 3(3-0).

Problems of the elementary school principal, including admission and entrance policies, classification and grouping, promotion, marks, reports, tests, discipline, selection of textbooks and equipment, assembly, supervision and care of the school plant; community relations, office management, the administration of special classes, attendance service, and types of school organization.

625. Elementary School Supervision. Credit 3(3-0).

Objectives and principles of supervision, supervision and teacher-training, professional preparation of elementary school supervisors, evaluation of instruction, supervision of activity programs, supervision of character education, etc.

626. High School Administration. Credit 3(3-0).

A basic professional course for the principalship and for other administrative positions in junior high schools, senior high schools, and junior colleges. The materials adapted to the needs of those holding positions of these types and to experienced teachers who desire to prepare for such positions. The following topics studied: scope and func-

tion of secondary school administration, the curriculum, the extra-curriculum, the guidance program, schedule, teaching load, equipment and supplies, office standards, procedures and forms; finance, and—the school and the community.

627. High School Supervision. Credit 3(3-0).

A course for principals, heads of departments, and supervisors. A study of problems, techniques, and materials in the improvement of instruction in secondary schools. Purpose and program of supervision, problems of senior high school, problems of junior high school, evaluation of teaching, aiding teachers to plan their work, observation and analysis of recitation, cooperative professional growth.

628a. Introduction to Adult Education. Credit 3(3-0).

A basic course dealing with the history, purpose, and scope; problems of administration, legislation; and need developments in adult education.

628b. Methods in Adult Education. Credit 3(2-2).

Methods of informal instruction, group leadership, conference planning, and techniques in handling various issues of interest to adults. For persons preparing to conduct or are now conducting adult education programs as well as those preparing to serve or are now serving as instructors or leaders in the public schools and/or in various agencies serving adults. Prerequisite: Educ. 628a.

629. Pupil Personnel Administration. Credit 3(3-0).

Pupil accounting, records and reports, financial reports, school census, special school records, pupil adjustment and progress, health and safety and legal aspects of pupil administration.

631. Educational Statistics. Credit 3(2-2).

A course designed to develop the student's command of the essential vocabulary, concepts, and techniques of descriptive statistics as applied to problems in education and psychology.

632. Seminar in Educational Problems. Credit 3(3-0).

Intensive study, investigation, or research in selected areas of education; reports and constructive criticism. Prerequisite: 15 quarter hours of graduate work; admission to candidacy for the master's degree.

633. The Community College and Post-secondary Education. Credit 3(3-0).

Philosophy, organization, and character of school programs needed to meet educational needs of individuals who desire to continue their education on the post-secondary level. Special attention is given to the trends in developing community colleges. Prerequisites: Ed. 605, 606; Psy. 621 or three or more years of teaching experience.

634. Principles of College Teaching. Credit 3(3-0).

Principles involved in teaching at the college level; techniques of teaching, teaching aids; criteria used in evaluation. Prerequisite: Psy. 621.

635. Supervision of Student Teachers. Credit 3(3-0).

A basic professional course for classroom teachers, principals, and supervisors who serve in an official capacity directing the field-laboratory experiences of student teachers. It is primarily concerned with the professional development of student teachers under the guidance of critic teachers as the two function in student teaching programs.

639E. Issues in Elementary Education. Credit 3(3-0).

A critical review of the background and functions of the elementary school as a social institution. Attention is given to increasing the ability to formulate the generalizations of development and learning into a meaningful framework for appraising current educational thinking and practice and predicting the direction in which these must move if elementary school programs are to continue to improve.

639S. Issues in Secondary Education. Credit 3(3-0).

An analysis of the role of the high school as an educational agency in a democracy. Attention is given to: (1) philosophical, psychological, and sociological bases for the selection of learning experiences; (2) contrasting approaches to curriculum construction; (3) teaching methods and materials; (4) evaluation procedures; and, (5) school-community relationships.

640E. Current Research in Elementary Education. Credit 3(3-0).

A critical analysis of the current research in elementary education and the implications of such for elementary school educative experiences.

640S. Current Research in Secondary Education. Credit 3(3-0).

A critical analysis of the current research in secondary education and the implications of such for high school educative experiences.

COURSES IN GUIDANCE

Advanced Undergraduate and Graduate

501. Introduction to Guidance (Formerly Education 233). Credit 3(3-0).

A foundation course for prospective teachers, part-time or full-time counselors who plan to do further work in the field of guidance or of education. Special consideration will be given to the nature, scope, and principles of guidance services.

602. Techniques of Individual Analysis. Credit 3(3-0).

A course designed to develop understandings and skills in collecting and interpreting data concerning the individual, and the use of such data in case studies and follow-up procedures.

603. Measurement for Guidance. Credit 3(3-0).

A study of educational and vocational testing with reference on a general framework for using statistical information in several types of counseling problems. Statistics necessary for the evaluation of psychological and educational measurement will be considered. This course also includes the measurement of aptitude including special aptitude with reference to prediction of proficiency in various occupations and curricula.

604. Educational and Occupational Information. Credit 3(3-0).

Where and how to get facts and assemble information about occupations and education. To learn the methods of using collected information.

605. Introduction to Counseling. Credit 3(3-0).

A course designed to give information regarding the background and theories of counseling. Consideration will be given to the counselor's function, counseling interview, use of records, and the school counselor's place in a total personnel program. Students will have the opportunity to listen to and evaluate recordings of special counseling cases.

606. Case Studies in Counseling. Credit 3(3-0).

Development of a basic understanding of the case study technique as used in counseling. Compilation, analysis, diagnosis and treatment of theoretical and actual counseling case histories.

607. Guidance Practicum. Credit 5(2-6).

The course provides practice in the job of the high school counselor with students of high school age. Primary emphasis will be placed on counseling but all phases of the work of the counselor will be covered.

608. Organization and Administration of Guidance Services. Credit 3(3-0).

This course is designed to afford the student an understanding of methods by which guidance policies and services may be properly implemented through organizational framework; consequently, leading to more effective organization of current guidance programs.

COURSES IN PSYCHOLOGY

Undergraduate

200. General Psychology (Formerly Education 221). Credit 5(5-0).

What psychology is, what it aims to do, how its data are gathered, and the principles of human behavior which it attempts to describe.

While this course will not be counted to meet the specific requirements in education for a high school teacher's certificate, it is a prerequisite for other courses in psychology.

201. Child Psychology (Formerly Education 230). Credit 3(2-2).

Study of the elaboration of behavior from conception to puberty in such a way as to discover the principles underlying the wholesome development of children. Prerequisite: Psy. 200.

202. Adolescent Psychology (Formerly Education 223). Credit 3(2-2).

Study of behavior during the culturally produced transition period between childhood and adulthood. Prerequisite: Psy. 200.

203. Educational Psychology (Formerly Education 231). Credit 3(3-0).

Basic problems underlying the psychology of education. Individual differences, development of personality, motivation of learning and development, nature of learning, and procedures which best promote its efficiency. Prerequisite: Psy. 201 or Psy. 202.

204. Tests and Measurements (Formerly Education 236). Credit 3(2-2).

Standardized and teacher-made measuring devices, acceptable methods of selecting, administering, and interpreting all types of tests applicable to the school and classroom. Prerequisite: Psy. 203.

205. Mental Hygiene (Formerly Education 226). Credit 5(5-0).

Basic principles of adjustment and mental hygiene, varieties of adjustment, personality, development, and psychotherapy in theory and in practice. Prerequisite: Psy. 200. Spring quarter.

206. Social Psychology (Formerly Sociology 240). Credit 5(5-0).

Social application of psychology; social stimulation and response; formation of attitudes involved in cooperation-completion, leadership-submission, frustration-aggression, crowd and mob phenomena. Prerequisites: Psy. 200 and Sociology 231. Winter quarter.

207. Introductory Experimental Psychology. Credit 5(3-4).

Scientific methodology in psychology; experiments in learning, the measurement of specific aptitudes, the measurement of personality, and the techniques of vocational diagnosis. Prerequisite: Psy. 200. Fall quarter.

208. Applied Psychology. Credit 5(5-0).

Utilization of psychological principles in five areas of American culture; effectively training new generations; maintaining mental health; administering justice; promoting economic progress; and, facilitating efficient production. Prerequisite: Psy. 200. Spring quarter, odd-numbered years.

NOTE: Psychology 203 and 204 are restricted to students formally admitted to the program for the preparation of secondary school teachers and minors in Applied Psychology. All other psychology courses are open to all students providing that they meet prerequisites.

209. Industrial Psychology. Credit 5(5-0).

Significance of individual differences in industry; employee selection and training; reduction of monotony and fatigue and the promotion of efficiency; accident prevention; psychological factors in employee turnover. Prerequisite: Psychology 200. Spring quarter, even-numbered years.

Graduate**617. Mental Hygiene for Teachers. Credit 3(3-0).**

An analysis of the function of mental hygiene in the total educative process. Attention is given to the basic principles of mental health as these apply to pupils and teachers alike; to the types of adjustment; to the development of personality; and to psychotherapeutic techniques for the restoration of mental health. Prerequisite: Psychology 621.

621. Educational Psychology. Credit 3(3-0).

A study of the applications of psychological principles to educational practices. Topics considered include: operations characteristic of the teaching process; human growth and development; modification of human behavior through learning and its measurement; and, control of the factors affecting the modification of behavior.

622. Measurement and Evaluation. Credit 3(2-2).

Measurement techniques for group surveys and individual pupil diagnosis studied, the students secure practice in scoring and interpreting a variety of tests. Topics include: characteristics of objective tests and standardized tests; the study and diagnosis of pupil aptitudes and abilities; test selection; construction of objective tests; interpreting data; evaluation of school programs. Prerequisite: Psychology 621.

SPECIAL EDUCATION**Advanced Undergraduate and Graduate****501. Introduction to Exceptional Children. Credit 3(3-0).**

An introductory course designed especially for classroom teachers. An over-view of the educational needs of exceptional or "different" children in the regular classroom situation. Emphasis will be placed on classroom techniques known to be most helpful to children having hearing losses, speech disorders, visual problems, emotional, social handicaps and intelligence deviation, including slow-learners and gifted children. The course serves as an introduction to the area of special education.

502. Psychology of the Exceptional Child. Credit 3(3-0).

Analysis of psychological factors affecting identification and development of mentally retarded children, physically handicapped children, and emotionally or socially maladjusted children.

503. Teaching the Slower Learner in the Regular Classroom. Credit 3(3-0).

Materials and methods for adjusting instruction in arithmetic, spelling, language, reading to the slower learning child in heterogeneous classes. Consideration will be given to discussion and study of the unit and activity program and the drill and skill program in relation to it.

504. Measurement and Evaluation in Special Education. Credit 3(2-2).

Selection, administration, and interpretation of individual tests; intensive study of problems in testing exceptional and extremely deviate children. Consideration will be given to measurements and evaluation of children that are mentally, physically, and emotionally or socially handicapped. Emphasis will be placed upon the selection and use of group tests of intelligence and the interpretation of their results.

505. Mental Deficiency. Credit 3(3-0).

Survey of types and characteristics of mental defectives. Classification and diagnosis. Criteria for institutional placement. Social control of mental deficiency. Prerequisites: Spl. Educ. 601 and 602.

506. Materials, Methods, and Problems in Teaching Mentally Retarded Children. Credit 5(2-6).

Basic organization of programs for the education of the mentally retarded. Classification and testing of mental defectives. Curriculum development and principles of teaching intellectually slow children. Attention is also given to the provision of opportunities for observing and working with children who have been classified as mentally retarded. Prerequisites: 15 quarter hours in special education.

DEPARTMENT OF ENGLISH

DARWIN T. TURNER, *Chairman*

The English Department assumes three responsibilities in the educational program of the institution. First, by means of composition courses, introductory literature courses, and laboratory courses, the department attempts to develop among the students the language skills required for intelligent communication. Second, the department provides the necessary information and training for prospective teachers of English. Third, the department offers the English majors a foundation of information and of knowledge of techniques which will enable them to pursue graduate study effectively.

COLLEGE REQUIREMENTS

All entering freshmen and transfer students who have not received credit for Freshman English are required to take a proficiency test in English. Those who do not pass this test must enroll in Preparatory English (English 210).

All students of the College must complete English 211, 212, and 213.

THE MAJOR IN ENGLISH

The major program in English is designed primarily to provide the student with the skills and the knowledge essential to his preparation for teaching in the junior or senior high school. In addition, however, the curriculum and the experience are intended to furnish the skills in communication, the exactness of thought, and the cultural background essential to the educated man. Consequently, the English major has a foundation which should enable him to pursue graduate study in English, library service, education, journalism, drama, speech, history, foreign languages, law, philosophy, and related areas. He has a background also which equips him to occupy a position, in industry or in business, which demands a person who can read, think, and express himself intelligently.

Requirements: The following courses are required for a major in English: English 217 (3), 219 (5), 220 (5), 221 (5), 222 (5), 223 (5), 224 (3), 226 (3), 234 (5), 237 (5), 242 (5), 245 (2), 247 (3), 248 or 249 (3), and 241 (3).

In addition, each English major is expected to become an active participant in at least one of the following organizations: the Fortnightly Club, the Kappa Phi Kappa Forensic Society, the Richard B. Harrison Players, the *Register*. As a junior or senior, the major serves for two quarters as an assistant to one of the instructors in the English Department. During the Fall Quarter of the senior year, the major takes a comprehensive examination in the field of English. Those failing the examination are required to prepare for a second examination.

Certification requirements: To qualify for a teaching certificate, the student must complete the following courses: Education 222, 224, 237, 243, 251; Psychology 202, 203; Guidance 501 or Psychology 204.

Students majoring in English are urged to follow the recommended schedule as closely as possible. Although the courses in English above 213 may be pursued in a different sequence, the student following the schedule will find that each course prepares him for the next.

SUGGESTED PROGRAM FOR ENGLISH MAJOR

Freshman Year

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English	211.3 (5)	212.3 (5)	213.3 (5)
Physical Education	(1)	(1)	-----
Education	211 (1)	-----	-----
Health Education .	-----	-----	211 (1)
Mathematics	309 or 311	311 or 312	312 (5) or
	(3) (5)	(5) (5)	elective
ROTC	211 (2)	212 (2)	213 (2)
	214 (5)	215 (5)	216 (F. L. Minors)
Foreign Language (recommended for freshmen who have com- pleted 2 yrs. of foreign language in high school)	or	or	or
or			
History	210 (5)	213 (5)	221 or elective
Music	215 (2)	216 (2)	217 (2)
or	or	or	or
Art	314	315	316
	<hr/>	<hr/>	<hr/>
	17-21	18-20	18-20

Sophomore Year

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English	219 (5)	241 (3)	247 (3)
English	245 (2)	237 (5)	217 (3)
Physical Education	(1)	(1)	(1)
Science	Botany 111 (5)	Zoology 111 (5)	Chemistry 111 (5)
History	210 (5)	213 (5)	211 (5)
or	or	or	or
Foreign Language	211 (5)	212 (5)	213 (5)
ROTC	221 (2)	222 (5)	223 (2)
	<hr/>	<hr/>	<hr/>
	18-20	18-20	16-18

Junior Year

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English	222 (5)	220 (5)	221 (5)
English	224 (3)	223 (5)	226 (3)
Psychology	200 (5)	-----	202 (3)
Education	222 (3)	-----	224 (3)

Chemistry	112 (5)	.....	.....
Minor .....	.....	(3-5)	(3-5)
or			
History .....	.....	226 (5)	.....
	<hr/>	<hr/>	<hr/>
	21	18-20	17-19

Senior Year

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English	234 (5)	242 (5)	.....
English	248 (3)	246 (3)	.....
Education	237 (3)	.....	251 (5)
Psychology	203 (3)	204 (3)	.....
Education .....	.....	.....	243 (5)
History .....	.....	(6-9)	.....
Electives	(3-6)	.....	.....
	<hr/>	<hr/>	<hr/>
	17-20	17-20	10

Recommended electives in studies other than language and literature:
History 226, Philosophy 211, Philosophy 223.

THE MINOR IN ENGLISH

Because most students who study in a minor field hope to be able to teach in that field if they should be unable to secure a job in their primary interest, the minor program is intended to furnish the student with a minimum foundation of the teaching of English in the junior or senior high school.

Requirements: English 217, 219, 221, 222, 223, 224, 234, 237, 242, 245.

In addition, each minor is required to pass a comprehensive examination in English during the Fall Quarter of the second year. Those failing the examination are required to prepare for a second examination.

Suggested Sequence for Minor

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Sophomore	219 (5)	.....	224 (3)
	245 (2)	237 (5)	217 (3)
Junior	222 (5)	223 (5)	221 (5)
Senior	234 (5)	242 (5)	.....

COURSES IN ENGLISH

Freshman Courses

210. Preparatory English. Credit 3(3-2).

A course designed to meet the needs of students whose scores on the placement test in English are below the average required by the College. Review of grammar leads to paragraph writing. Instruction is provided in developmental reading.

211. Freshman Composition I. Credit 5(5-0).

An introduction to oral and written communication; provides the student with experience in writing short compositions, outlining written material, and improving his reading skills.

212. Freshman Composition II. Credit 5(5-0).

A continuation of 211 in which the student is provided with additional experience and the techniques of investigative writing. Prerequisite: English 211.

213. Freshman Composition III.

A continuation of 212 in which the student is provided with more intensive instruction in expository and argumentative writing and with additional instruction in the basic skills and knowledge essential to descriptive and narrative composition. Prerequisite: 211 and 212.

217. Developmental Reading. Credit 3(3-1).

Instruction and practice in methods of increasing rate of reading and techniques of comprehending written material; emphasis upon vocabulary study.

Speech and Expression

224. Voice and Speech Improvement. Credit 3(3-1).

A study of the fundamental processes essential to effective speech; tests and recordings to discover voice and speech defects; projects, exercises, and drills to develop skill in a variety of speech situations. Laboratory hours arranged for individual students on Tuesday or Thursday between 9 a.m. and noon and between 1 p.m. and 3 p.m.

225. Public Speaking. Credit 3(3-0).

A study of the methods by which public speeches are made clear, interesting, and forceful; practice in writing and delivering speeches according to the occasion. Prerequisite: English 224.

228. Play Direction. Credit 3(1-4).

A study of the fundamentals of stagecraft, direction, and acting; theoretical and practical knowledge of the preparation of a play, from the initial reading of the script to the opening night.

236. Argumentation and Debating. Credit 3(3-2).

Principles of argumentation; discussions, lectures, and classroom debates.

Language and Composition

Completion of English 211, 212, and 213 is a prerequisite for the following courses.

245. Introduction to Literary Studies. Credit 2(2-0).

An introduction to the critical analysis, literary criticism, investigative and bibliographical techniques necessary to advanced study in English; required of English majors and minors at the beginning of the sophomore or the junior year.

231. Journalism. Credit 3(2-2).

Theoretical and practical work in gathering, organizing, and writing news; primary attention to the development of journalistic technique; drill on the fundamental principles of composition.

237. Advanced English Grammar and Composition. Credit 5(5-0).

An intensive study of grammar and composition intended to equip the student with the knowledge of grammar essential to teaching English in the junior or senior high school and with additional training in the composition skills to enable him to express himself more effectively. Required of English majors and minors.

244. Advanced Composition. Credit 3(3-0).

A study of techniques of narrative, descriptive, expository, and argumentative composition; intended especially for the student not majoring in English who desires additional training in composition and for the student who desires instruction in imaginative writing.

246. Research. Credit 3(3-0).

Advanced study in the techniques of research and investigation; open only to seniors. Each student is expected to prepare an investigative or a critical study.

247. Introduction to the History of the English Language. Credit 3(3-0).

A course designed to develop the student's understanding of modern English syntax, vocabulary, etymology, spelling, pronunciation, and usage and to increase the student's comprehension of English literature of previous centuries through a study of the history of the language.

Literature

Completion of English 211, 212, and 213 is a prerequisite for these courses.

219. Masterpieces of World Literature. Credit 5(5-0).

A study of selected poetic and prose literary masterpieces in relation to the culture and literary tradition which produced them; excludes British and American literature.

220. American Literature I. Credit 5(5-0).

A survey of American literature from colonial days to the pre-Civil War period; a study of the literary movements and major authors in relation to the cultural history of America.

221. American Literature II. Credit 5(5-0).

A continuation of the study of American literature, from 1865-1914.

222. English Literature I. Credit 5(5-0).

A survey of English literature from the beginning to 1700; a study of the literary movements and major authors in relation to the cultural history of England.

223. English Literature II. Credit 5(5-0).

A continuation of the study of English literature, from 1700 to 1914.

The prerequisites for the following courses are English 211, 212, 213, and a five hour course in literature.

226. A History of Drama. Credit 3(3-0).

A study of major playwrights and dramaturgical theory from the Middle Ages to the present day. Prerequisite: English 241 or 219.

234. Shakespeare. Credit 5(5-0).

An introduction to a study of the works of William Shakespeare through a detailed examination of representative works selected from the major periods of his development as a dramatist.

241. Classical and Biblical Literature. Credit 3(3-0).

A study of myth, poetry, drama, and philosophy of the ancient Greek, Roman, and Hebrew civilizations preparing the student for an understanding of the allusions of writers of later cultures.

242. English and American 20th Century Poetry and Prose. Credit 5(5-0).

A study of the major writers in relation to the cultural and literary traditions from 1914 to the present, includes a study of Negro authors who have contributed significantly to literature.

243. Neo-Classical Literature. Credit 3(3-0).

A study of the principles of Classicism as expressed in the works of English writers of the 17th and 18th centuries. (Not offered in 1961-62.)

248. The English Novel. Credit 3(3-0).

A history of the English novel from the eighteenth century to 1914 and literary traditions which influenced their work. Offered in alternate years beginning in 1960-61.

249. The American Novel. Credit 3(3-0).

A history of the American novel with emphasis upon the major novel in relation to the cultural and literary traditions which influenced their work; includes a study of significant Negro novelists. Offered in alternate years beginning in 1961-62.

DEPARTMENT OF FOREIGN LANGUAGES

WAVERLYN NATHANIEL RICE, JR., *Chairman*

The Department of Foreign Languages offers courses in French, Spanish, and German. A major is given in French and basic courses are offered in Spanish and German.

Elementary French courses 211, 212, 213 are recommended for those students who have no previous knowledge of the language, or who present one unit of high school credit. For those students presenting two units of high school credit, intermediate language courses 214 and 215 are required. However, if students with two units of the language in high school should take an elementary course, they are required to complete 15 hours on the same level.

The department has for objectives the following:

1. To develop reasonable facilities in the reading, speaking, and writing of the principal modern foreign languages.
2. To lead students to an intelligent appreciation of outstanding literary masterpieces.
3. To develop a better knowledge of continental contributions to modern culture.
4. To create a spirit of understanding that will result in proper attitude toward different national groups.
5. To prepare students whose interests are in the area of teaching for employment in secondary schools, especially for those of North Carolina.
6. To encourage students who manifest linguistic ability to continue further study in this area and possibly research.

Major in Foreign Languages

Junior Year				
<i>Course and No.</i>		<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
French 218, 219, 220				
or				
French 221, 222, 223	5(5-0)	5(5-0)	5(5-0)	
Psychology 200	5(5-0)	.....	.....
Education 222 .....	.....	3(3-0)	.....
Electives—Spanish 211, 212, 213	5(5-0)	5(5-0)	5(5-0)	
or				
French 231, 245, 216	3(3-0)	5(5-0)	5(5-0)	
		<hr/>	<hr/>	<hr/>
	18	18	15	

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
French 232, 233, 234	3(3-0)	3(3-0)	3(3-0)
Education 247, 251	5(5-0)	5(5-0)	5(5-0)
Electives—French 217	5(5-0)	.....	.....
or			
Spanish 214, 215, 216	5(5-0)	5(5-0)	5-5(-0)
Electives in minor .....	.....	10(10-0)	.....
	<hr/>	<hr/>	<hr/>
	18	23	13

Minor in Foreign Languages

Students electing foreign languages as a minor are advised to include in their program the following courses:

French 214, 215, 216

French 221, 222, 223 or

French 218, 219, 220

French 232, 233, 234

COURSES IN FRENCH

211. Elementary French. Credit 5(5-0).

Essentials of grammar and pronunciation, acquisition of vocabulary, and attention to elementary composition. Fall.

212. Elementary French. Credit 5(5-0).

Continuation of grammar and pronunciation. Conversation and dictation encouraged. Winter.

213. Elementary French. Credit 5(5-0).

Practice in oral and written composition. Acquisition of taste for advanced French through reading, translation, and interpretation of easy modern French prose. Spring.

214. Intermediate French. Credit 5(5-0).

Course open to students who have completed two units of high school French or college French 211, 212, 213. Brief review of grammar followed by practice in pronunciation. Fall.

215. Intermediate French. Credit 5(5-0).

Reading of French plays encouraged. Ability to write and converse in French further developed. Winter.

216. Phonetics. Credit 5(5-0).

Course intended for students majoring or minoring in French. Recommended for those who wish to improve pronunciation. Spring.

217. Survey of French Literature. Credit 5(5-0).

(Formerly French Literature of the Middle Ages and the Renaissance). A general introduction to the more advanced study of French literature. This course gives a clear idea of the great periods and main tendencies in history of French thought and letters from 842 to the present. Fall Quarter.

218. Advanced French Composition. Credit 5(5-0).

Advanced course in oral and written self-expression in French. Special attention to vocabulary building, free composition, and conversation, prepared and improvised, covering the many phases of everyday activities. Spring.

219. Advanced French Conversation. Credit 5(5-0).

Course for students having some experience in written French. To improve oral and aural conversation. Working groups arranged for practice in French conversation. Winter.

220. Advanced French Grammar and Reading. Credit 5(5-0).

To give the student practical training in the use of advanced French grammar and reading. Conducted largely in French. Spring.

221. French Literature of the Seventeenth Century. Credit 5(5-0).

Course presents Classicism through masterpieces of Corneille, Racine, Moliere and other authors of the "Golden Period" in French letters. Conducted in French. Fall.

222. French Literature of the Eighteenth Century. Credit 5(5-0).

To study in particular the life and works of Montesquieu, Voltaire, Rousseau, and the Encyclopedists. Class conducted in French. Winter.

223. French Literature of the Nineteenth Century. Credit 5(5-0).

Study of the great literary currents of the nineteenth century, Romanticism and Realism. Spring.

224. Introductory Scientific French. Credit 3(3-0).

Emphasis placed on Scientific French on the elementary level. Basic scientific vocabulary introduced to enable students to translate French of a scientific nature.

231. Contemporary French Literature (Formerly 243). Credit 3(3-0).

Course deals with the chief writers and literary currents of the time through lectures and outside readings.

232. Oral French. Credit 3(3-0).

Basic oral French course prepares students for French 233 and 234. To improve the student's hearing and speaking abilities in French.

233. Intermediate Conversational French. Credit 3(3-0).

To give students intensive training in self-expression and to improve pronunciation and diction in reading and speaking. Class conducted in French. Winter.

234. Advanced Conversational French. Credit 3(3-0).

Intensive oral and written work including discussions and compositions in French. Assigned outside readings on newspaper articles, literature, civilization, etc. encouraged. Spring.

245. French Civilization. Credit 5(5-0).

A general survey of the history of France, with emphasis on the social, political and economic development designed to give the student an understanding of present conditions and events. A detailed study of such French institutions as art, music, and education. Course is also offered in conjunction with reports of collateral readings.

COURSES IN GERMAN

German 211. Elementary German. Credit 5(5-0).

Fundamentals of pronunciation and grammar. Attention given to vocabulary building.

German 212. Elementary German. Credit 5(5-0).

Continuation of emphasis on pronunciation, grammar, and vocabulary building. Attention given studied and sight translations. Oral practice encouraged.

German 213. Elementary German. Credit 5(5-0).

Continuation of emphasis on pronunciation and grammar, with some practice in diction and conversation. Maximum attention given to graded readings in German prose and poetry.

German 214. Introductory Scientific German. Credit 3(3-0).

Emphasis placed on Scientific German on the Elementary level. Basic scientific vocabulary introduced to enable students to translate German of a scientific nature.

German 215. Intermediate Scientific German. Credit 3(3-0).

This course continues Scientific German of the intermediate level. Emphasis is placed on reading works in Science.

German 216. Advanced Scientific German. Credit 3(3-0).

Intensive work in Scientific German including compositions. Assigned outside readings on current Scientific German developments.

COURSES IN SPANISH**211. Elementary Spanish. Credit 5(5-0).**

To secure the understanding of easy Spanish, written and spoken. Attention given to essentials of grammar and pronunciation. Fall.

212. Elementary Spanish. Credit 5(5-0).

Continues work in grammar and pronunciation. Prose reading encouraged by exercises in vocabulary building. Winter.

213. Elementary Spanish. Credit 5(5-0).

Attention to advanced elementary grammar. Prose reading continues and a taste for advanced Spanish stimulated through the reading of poetry.

214. Intermediate Spanish. Credit 5(5-0).

For students who have completed two units of high school Spanish or college Spanish 211, 212, 213. A thorough review of Spanish syntax with emphasis on its essential difficulties.

215. Intermediate Spanish. Credit 5(5-0).

To give practice in writing idiomatic Spanish in translations and free compositions. Readings selected from modern authors.

216. Survey of Spanish Literature. Credit 5(5-0).

Course designed to give a survey of the most important movement, writers, and works from the Middle Ages up to the present time.

217. Advanced Spanish Grammar and Composition. Credit 3(3-0).

An advanced course in the study and usage of Spanish grammar and composition, giving a systematic review of oral and written grammar through compositions and exercises.

218. Syntax of the Spanish Verb. Credit 3(3-0).

Principal uses of the Spanish verb. Illustrative examples selected passages of works of standard prose writers. Course recommended for advanced students and prospective teachers.

219. Introduction to Modern Spanish Literature. Credit 3(3-0).

To give the student an introduction to works of important authors of the period through the reading and discussion of selected modern works.

Advanced Undergraduates and Graduates

501. Problems and Trends in Foreign Languages. Credit 3(3-0).

Problems encountered by teachers given consideration. Place and purpose of foreign language in the curriculum today.

502. Oral Course for Teachers of Foreign Languages. Credit 3(2-2).

Designed for teachers of foreign languages to improve pronunciation and spelling.

503. Research in the Teaching of Foreign Languages. Credit 3(3-0).

Open to students who are interested in undertaking the study of a special problem in the teaching of a foreign language.

504. The French Theatre. Credit 3(3-0).

A thorough study of the French theatre from the Middle Ages to the present.

505. The French Novel. Credit 3(3-0).

A study of the novel from the Seventeenth Century to the present.

506. French Syntax. Credit 3(3-0).

Designed to teach grammar on the more advanced level.

DEPARTMENT OF MUSIC

HOWARD T. PEARSALL, *Chairman*

Since music is recognized as an important part of life, the principal and ultimate aim of our courses is directed toward the development of interest in and a sincere desire to understand and to appreciate more fully all types of music. The curriculum is designed to give the student a thorough training so that he will be prepared to teach music, to continue the study of music after the completion of these courses, and to be an influencing factor in the cultural development of his community.

Courses of Instruction

For Majors in Instrumental Music

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mus. 201, 202, 203 Theory	3(2-2)	3(2-2)	3(2-2)
Mus. 227 Piano Class .....	.....	.....	1(0-2)
Mus. 228 Maj. Instrument .....	.....	.....	2(0-5)
Eng. 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
German 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Math. 311, 312, College			
Algebra and Trig.	5(5-0)	5(5-0)

Ed. 211 Orientation	1(1-0)
ROTC Mil. Science	2(2-2)	2(2-2)	2(2-2)
H. Ed. 211	1(1-0)
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	20	20	20

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mus. 204, 205, 206 Theory	3(2-2)	3(2-2)	3(2-2)
Mus. 3881b, 1c, 2a Maj. Instrument	2(0-5)	2(0-5)	2(0-5)
Mus. 217 Intro. To Music Literature .....	.....	.....	2(1-2)
Hist. 210, 211, 213	5(5-0)	3(3-0)	3(3-0)
Physics 311, 312	5(4-2)	5(4-2)	.....
ROTC 222, 223, 224 Mil. Science	2(3-2)	2(3-2)	2(3-2)
Ed. 222	3(3-0)
Psy. 202	3(2-2)
Phy. Ed. 210abc	1(0-1)	1(0-1)	1(0-1)
Art 314, 316	2(2-0)	2(2-0)
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	20	18	18

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mus. 207, 208 Theory	3(2-2)	3(2-2)
Mus. 209 Form and Analysis .....	.....	.....	5(3-2)
Mus. 223 Brass Instruments	2(1-2)	.....	.....
Mus. 224 Woodwind Instruments .....	.....	2(1-2)	.....
Mus. 224 Percussion Instruments .....	.....	.....	2(1-2)
Mus. 228 2b, 2c, 3a	2(0-5)	2(0-5)	2(0-5)
Mus. 229 Minor Instruments .....	.....	.....	2(0-4)
Eng. 220, 221 or 222	5(5-0)	5(5-0)
Ph. Ed. 220a, b, c	1(0-2)	1(0-2)	1(0-2)
Ed. 224, 233	3(3-0)	3(3-0)
Psy. 203	3(3-0)
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	16	16	15

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mus. 210 Counterpoint	5(3-2)
Mus. 211 Score Reading and conducting ..	.....	3(2-2)	.....
Mus. 211 Band Arranging .....	.....	5(5-0)	.....
Mus. 221 Mus. of Baroque	2(2-2)	.....	.....
Mus. 222 The Symphony .....	.....	2(2-2)	.....
Mus. 228 3b, 3c	2(0-5)	2(0-5)	.....
Mus. 229 b, c Min. Instru.	2(0-4)	2(0-4)	.....

Mus. 226 Class Voice .....	.....	2(0-2)
Ed. 236 Pub. School Mus.	3(3-0)
Ed. 237	3(3-0)
Ed. 244 Band Methods	5(5-0)
Ed. 251	5(5-0)
Hist. 221	5(5-0)
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This outline follows the required courses for all students in the School of Education and General Studies (see page). Students should remember that most courses in music are in sequence, and each sequence must be started in the fall quarter.

While enrolled at A. and T. College, all music majors and minors must participate in a major instrumental group. All music majors must participate in a minimum number of student recitals. Students are required to attend lyceum programs and student recitals and must turn in a notebook each quarter.

All persons interested in either a major or minor in instrumental music are required to study piano for four quarters and must complete instruction upon both a major and a minor instrument.

COURSES OF INSTRUCTION

THEORY

200. Sightsinging (Formerly Music 207). Credit 1(0-2).

Learning to sing simple melodies at sight. For choir and glee club.

201. Theory I (Formerly Music 208). Credit 3(2-2).

Basic theory. Notation, scales, intervals, triads in all positions, in all keys, major and minor, with ear training, sight singing, and dictation.

202. Theory II (Formerly Music 209). Credit 3(2-2).

A continuation of Theory I.

203. Theory III (Formerly Music 210). Credit 3(2-2).

A continuation of Theory II.

204. Theory IV (Formerly Music 211). Credit 3(2-2).

Intermediate Theory. Triads, seventh chords, use of figured bass, non-harmonic tones, altered chords, augmented sixth chords, modulation.

205. Theory V (Formerly Music 212). Credit 3(2-2).

A continuation of Theory IV.

206. Theory VI (Formerly Music 213). Credit 3(2-2).

A continuation of Theory V.

207. Theory VII. Credit 3(2-2).

Ninth chords, chromatic harmony, advanced modulation.

208. Theory VIII. Credit 3(2-2).

A continuation of Theory VII.

209. Form and Analysis. Credit 5(3-2).

Techniques of harmonic, contrapuntal, and formal analysis of music of the sixteenth century, Baroque, Viennese Classical, Romantic, and Impressionistic Periods.

210. Counterpoint. Credit 5(5-0).

Sixteenth Century polyphonic composition; use of modes.

211. Score Reading and Conducting. Credit 3(2-2).**212. Band Arranging (Formerly Music 214). Credit 5(5-0).**

The art of writing for small combinations of instruments; the art of sectional writing for instruments; the art of scoring for full band.

MUSIC APPRECIATION AND HISTORY

Six hours of Music Appreciation and/or Art Appreciation are required in the School of Education and General Studies.

213. Music Appreciation (Formerly Music 211). Credit 2(2-2).

A study of melody, harmony, rhythm, simple form, vocal music, texture, and the orchestra.

214. Music Appreciation (Formerly Music 212). Credit 2(1-2).

A study of classicism, romanticism, program and descriptive music, sonata form, and the symphony.

215. Music Appreciation (Formerly Music 213). Credit 2(1-2).

The overture, concerto, impressionism, modernism, the baroque, and chamber music.

216. Music for the Home, School and Community. Designed for Home Economics Majors. Credit 2(2-2).

The function of music in daily living, with emphasis on listening for personal growth. Music for receptions, dinners, and other festivities. Music clubs, the community concerts and music in recreation.

217. Introduction to Literature. Credit 2(1-2).

Develops a technique for listening analytically and critically to music, with an understanding of design and the score of selected compositions from all periods. For Music Majors.

218. History and Appreciation of Music (Formerly Music 211). Credit 3(2-2).

Music of the ancient Greeks to the seventeenth century. For Music majors.

219. History and Appreciation of Music (Formerly Music 222). Credit 2(2-2).

Music of the 17th, 18th, and 19th centuries. For Music Majors.

220. History and Appreciation of Music (Formerly Music 223). Credit 3(2-2).

Music of the Neo-Romantic and modern periods. For Music Majors.

221. Music of the Baroque. Credit 2(2-2).

The music of Bach and Handel.

222. The Symphony. Credit 2(2-2).

A survey of the symphony and orchestra from the pre-classical to the modern period.

223. Percussion Instruments (Formerly Music 217). Credit 2(1-2).

The percussion instruments studied. Some proficiency on at least one instrument of this section is required of each student.

224. Woodwind Instruments (Formerly Music 218). Credit 2(1-2).

The woodwind instruments studied. Some proficiency on at least one instrument of this section is required of each student.

225. Brass Instruments (Formerly Music 219). Credit 2(1-2).

The brass instruments studied. Some proficiency on at least one instrument of this section is required of each student.

226. 1abc, 2abc, 4abc. Voice Class (Formerly Music 246). Credit 2(0-2).

Open to qualified persons who wish to know the technique of vocal culture.

APPLIED MUSIC

Each music major will select a major instrument and two minor instruments. One of the minor instruments should be piano if the student has not had such study. Thirty-two quarter hours of applied music are required for the State of North Carolina certification and these instruments should be started not later than the sophomore year. Music 223, 224, and 225 may be included in the total number of hours for credit. Major instruments must be studied for three years, and minor instruments for five quarters.

Definition of Major Courses—A major course is designed to give intensive and extensive training in an instrument and includes an individual lesson of one hour weekly, or the equivalent in smaller groups.

A minimum of one and one-half hours daily practice is required. The following instruments are suitable for major concentration:

MAJOR INSTRUMENTS

Flute	Oboe	Trombone—Baritone
Clarinet	Bassoon	Tuba—Bass
Saxophone	Cornet—Trumpet	Percussion
	French Horn	

NOTE: All examinations in major instruments are by jury composed of faculty.

Definition of Minor Courses—A minor instrument course is designed to give those students whose major instrument is in another family a practical approach to an additional instrument, preferable in a different instrument family. Instruction in minor courses include small groups. One hour of daily practice is required. The following courses and instruments are suitable for minor concentration.

MINOR INSTRUMENTS

Piano	Harp	Saxophone
Organ	Flute	Cornet—Trumpet
Violin	Oboe	French Horn
Viola	Bassoon	Trombone—Baritone
Cello	Clarinet	Tuba—Bass
Bass Viol		Percussion

227a, b. Piano Classes. Credit 1(0-2) each.

These courses designed for band majors and minors. Simple compositions, scales and arpeggios studied.

228-1abc, 2abc, 3abc. Major Instruments. Credit 2(0-5).

Each music major will select a major instrument. Proficiency on major instruments will be determined by lessons and by regular appearance of student recitals.

229abc. Minor Instruments. Credit 2(0-4).

Each music major will select a minor instrument.

ENSEMBLES

230. Ensemble. Credit 1(0-2).

A study of Music for small instrumental groups.

231-1abc. Senior Band. Credit 1(0-5) each quarter.

For students planning to major or minor in band music and is open to qualified freshmen who have had at least two years of previous training in a band instrument. This includes the College Concert and Marching Band.

231-2abc. Senior Band (Formerly Music 240). Credit 1(0-5) each quarter.

For qualified sophomores.

231-3abc. Senior Band (Formerly Music 240). Credit 1(0-5) each quarter.

For qualified juniors.

231-4abc. Senior Band (Formerly Music 240). Credit 1(0-5) each quarter.

For qualified seniors.

232-1abc, 2abc, 3abc, 4abc. Choir (Formerly Music 248). Credit 1(0-4) each quarter.

Representative sacred and secular choral masterpieces from the sixteenth century to the present day.

233-1abc, 2abc, 3abc, 4abc. Men's Glee Club (Formerly Music 249). Credit 1(0-4) each quarter.

The best in choral literature for male voices studied and presented.

DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION

WILLIAM M. BELL, *Chairman*

RANDA D. RUSSELL, *Chairman Women's Division*

The physical education program aims to promote the health, physical and mental efficiency of each student enrolled in the College and to provide carry-over interests and activities for all.

A wide variety of courses is provided to meet the needs and interests of the student and to acquaint him with many activities in the field of physical education. Any student who, in the opinion of the College medical staff, is unfit to participate in the required activity program may elect a restricted course or any part of a course which will not aggravate the present disability.

Students must be prepared, upon matriculation, to place their orders for the activity uniforms, the approximate cost for which is \$12.00 for men and \$10.00 for women.

DEPARTMENTAL OBJECTIVES

The objectives of the Department of Physical Education are:

1. To provide instruction in a wide variety of physical education activities to meet the needs and interests of all students in the required general education program of the College.
2. To provide courses in health and physical education which meet State and national teacher certification standards.
3. To promote participation in wholesome extra-curricular activities through sponsoring and supervising such organizations as the Cheerleaders' Squad, Dance Group, Gymnastic Squad, W.A.A., and Intramural Leagues.
4. To provide recreational outlets for students and members of the College community through conduct of informal physical recreational activities.
5. To enrich the total College program through cooperation with the programs of such units of the College as the music and dramatic groups, alumni association, agricultural, homemaking groups, guidance and health service divisions.
6. To provide a sequence of educational experiences which meet the specialized needs of students planning careers in health and physical education, recreation, athletic coaching, and related fields.
7. To provide opportunity for wholesome competition for men possessing exceptional athletic ability through a well-balanced program of varsity athletics.

SERVICE COURSES IN HEALTH AND PHYSICAL EDUCATION

(Open to all students)

Courses For Women

- 210a. Soccer and Speedball. Fall. Credit 1(0-2).
- 210b. Basketball. Winter. Credit 1(0-2).
- 210c. Softball and Volleyball. Spring. Credit 1(0-2).
- 220a. Hockey. Fall. Credit 1(0-2).
- 220b. Stunts and Tumbling. Winter. Credit 1(0-2).

220c. Badminton and Archery. Spring. Credit 2(0-2).

221a,b,c. A continuation of the course 215a,b, and c. (Fall, Winter, Spring). Credit 1(0-2) each quarter.

Courses For Men

210a. Speedball and Soccer. Fall. Credit 1(0-2).

210b. Stunts and Tumbling. Winter. Credit 1(0-2).

210c. Volleyball, Track and Field. Spring. Credit 1(0-2).

220a. Touch Football. Fall. Credit 1(0-2).

220b. Basketball. Winter. Credit 1(0-2).

220c. Softball and Badminton. Spring. Credit 1(0-2).

Courses For Women or Men

210N. Body Mechanics. Credit 1(0-4).

211. Tap Dancing. Winter. Credit 1(0-2).

212. Folk Dancing. Spring. Credit 1(0-2).

213. Tennis. Fall and Spring. Credit 1(0-2).

214. Golf. Credit 1(0-2).

215a,b,c. Adapted Physical Education Activities. (Fall, Winter, Spring). Credit 1(0-2) each quarter.

Special activities designed for those students whose examinations show that they are unable to participate in the regular physical education classes.

217. The Modern Dance (For Beginners). Credit 1(0-2).

217-1a,1b,1c. Dance Group. (Fall, Winter, Spring). Credit 1(0-4) each quarter.

217-2a,2b,2c. Dance Group. (Intermediate). (Fall, Winter, Spring). Credit 1(0-4) each quarter.

217-3a,3b,3c. Dance Group. (Advanced). (Fall, Winter, Spring). Credit 1(0-4) each quarter.

218a, b, and c. Gymnastics. (Fall, Winter, Spring). Credit 1(0-4) each quarter.

219. Swimming. (Fall, Winter, Spring). Credit 1(0-2).

The elementary skills outlined in the American Red Cross standards for beginning swimmers.

219a. Swimming. (For Intermediates). (Fall, Winter, Spring). Credit 1(0-2).

219b*. Life Saving. (Fall, Winter, Spring). Credit 1(0-2).

221a,b,c. A continuation of the course 215a,b,c. (Fall, Winter Spring). Credit 1(0-2) each quarter.

230. Principles, Practices, and Procedures in Physical Education. Credit 3(2-2).

The underlying principles, methods and procedures of physical education for elementary school teachers, including practice in the utilization of materials and techniques for teaching graded games, stunts, rhythms, and similar activities on the elementary level.

HEALTH EDUCATION COURSES

(Open to all Students)

211. Personal Hygiene (Formerly P.E. 213). Required of Freshmen. Credit 1(1-0).

Consideration is given to personal and mental hygiene to establish a basis for positive health and efficiency through the development of desirable health habits, knowledge and attitudes.

212. First Aid (Formerly P.E. 208). Men and Women. Credit 1(0-2).

For students other than those majoring in physical education. First Aid to the injured in the home, school and community. A consideration of First Aid practices with laboratory experiences as well as lecture and discussion opportunities. Successful completion of this course leads to the Red Cross Standard certificate in First Aid.

230. Principles, Practices and Procedures in Health Education. (Same as Ed. 230H). Credit 3(2-2).

The basic principles, methods and procedures for developing a health education program in the elementary school. Theory and practice in the organization and presentation of school health education with special emphasis upon instructional materials and techniques for the elementary school teacher.

234. Personal and Community Health (Formerly P.E. 234). Credit 5(5-0).

This course aims to establish within the individual a basis for positive health and effective living through a consideration of those factors which effect his personal and health efficiency. Consideration is also

*Open to all college students. Successful execution of the required skills by the student in rescue and instruction will be certified by the American Red Cross. Prerequisites: To possess skills required by the American Red Cross on the Intermediate level or above.

given to the field of public health as it affects the community, with special emphasis being placed on ways in which the individual and community agencies may improve and maintain group health.

REQUIREMENTS FOR MINOR IN PHYSICAL EDUCATION

The Physical Education minor requires a minimum of 35 quarter hours. This would include 8 hours of activity courses, 8 hours of applied technique courses, 8 hours of health education, 3 hours of P.E. 230 or 243, and 8 hours from the area of organization and administration, history, problems, or community recreation. Required freshman courses may not be included in the 35 hours.

Suggested Sequence for Minor in Physical Education

Phy. Ed. 222	1 hour
Phy. Ed. 223	2 hours
Phy. Ed. 224	1 hour
Phy. Ed. 225	1 hour
Phy. Ed. 226	1 hour
Phy. Ed. 227	1 hour
Phy. Ed. 228	1 hour
Phy. Ed. 229 (Men)	1 hour

(Eight hours must be selected from above group.)

Phy. Ed. 231	2 hours
Phy. Ed. 232	2 hours
Phy. Ed. 233	2 hours
Phy. Ed. 234	2 hours
Phy. Ed. 235	2 hours
Phy. Ed. 236	2 hours
Phy. Ed. 237	2 hours
Phy. Ed. 238	2 hours

(Eight hours must be selected from above group.)

Health Ed. 234	5 hours
Health Ed. 244 or 230	3 hours
Phy. Ed. 230 or 243	3 hours

(Above group Required)

Phy. Ed. 239	5 hours
Phy. Ed. 242	3 hours
Phy. Ed. 248	3 hours
Phy. Ed. 249	5 hours

(Eight hours must be selected from above group.)

Total hours required 35 hours

INTER-DEPARTMENTAL MINOR IN RECREATIONAL LEADERSHIP

Inter-Departmental programs are designed to meet the needs of those students interested in the field of Recreational Leadership. The program cuts across departmental lines and utilizes the courses and resources of other departments and schools to balance and enrich the experiences for recreation minors.

Recreation Minor for Home Economics Education and Nursery Education Majors. The departments of Home Economics and Physical Education cooperate in an inter-departmental minor in Recreation. The schedule of courses is designed to meet the needs of individual students who desire a background of culture and recreational leadership skills that will enable them to enrich their family life or render distinct contributions to community projects.

Recreation Leadership Minor for Majors in Sociology. The departments of Social Science and Physical Education cooperate in an inter-departmental minor in Recreational Leadership. The freshman-sophomore requirements are approximately the same as for any bachelor degree program in the School of Education and General Studies. In the Junior and Senior years, course work is drawn from other departments and schools to balance and enrich the student's minor program.

MAJOR CURRICULUM IN PHYSICAL EDUCATION

The professional curriculum in physical education is designed to prepare students to become teachers of health and physical education, and athletic coaches. The physical education teacher is generally expected to teach other courses. It is, therefore, recommended that the student, upon counsel of his adviser, pursue courses leading to a second major or double minor.

MAJOR IN PHYSICAL EDUCATION

Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Eng. 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Math. 311, 312	5(5-0)	5(5-0)	.....

Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Hist. 210 .....	.....	.....	5(5-0)
Phy. Ed. 210a, 210b, 210c	1(0-2)	1(0-2)	1(0-2)
Health Ed. 211 .....	.....	1(0-2)	.....
Educ. 211	1(1-0)	.....	.....

Art 314, 315 or Music 215, 216	2(2-0)	2(2-0)	.....
Phy. Ed. 219 .....	.....	1(0-2)	.....
R.O.T.C. 213 (men) .....	.....	.....	2(2-2)
Zoology 111, Bot. 111	5(3-4)	5(3-4)	.....
Elective .....	.....	.....	3(3-0)
Music 217 or Art 316 .....	.....	.....	2(2-0)
	19	20	18

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112	5(3-4)	5(3-4)	.....
English 220, 221 or 223 .....	.....	.....	5(5-0)
History 221 or 222, and 213	5(5-0)	.....	5(5-0)
Phy. Ed. 223, 225, 227	2(1-4)	1(0-5)	1(0-5)
Phy. Ed. 224, 226	1(0-5)	1(0-5)	.....
Phy. Ed. 229 (Men) .....	.....	.....	1(0-5)
Phy. Ed. 222, 225 (Women)	1(0-5)	1(0-5)	.....
Psychology 200 .....	.....	.....	5(5-0)
R.O.T.C. 221, 222, 223 (Men)	2(2-2)	2(2-2)	2(2-2)
Health Educ. 234 .....	.....	5(5-0)	.....
Elective	3(3-0)	3(3-0)	.....
	19	18	19

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Educ. 222, 224, 237	3(3-0)	3(3-0)	3(3-2)
Psychology 202, 203, 204	3(2-2)	3(3-0)	3(3-0)
Zool. 131 (Anatomy), 141 (Physiology) ...	.....	5(3-4)	5(5-0)
Phy. Ed. 231, 232, 234	2(1-2)	2(1-2)	2(1-2)
Phy. Ed. 228	1(0-5)	.....	.....
Phy. Ed. 233, 235 .....	.....	2(1-2)	2(1-2)
Health Ed. 236 .....	.....	3(3-0)	.....
Phy. Ed. 239, 242	5(5-0)	.....	3(2-2)
	14	18	18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Phy. Ed. 236	2(1-2)	.....	.....
Phy. Ed. 237 (Women)	2(1-2)	.....	.....
Phy. Ed. 238 (Men)	2(1-2)	.....	.....
Phy. Ed. 241, 244, 248	3(3-0)	3(3-0)	3(3-0)
Phy. Ed. 249 .....	.....	5(5-0)	.....
Health Ed. 238 .....	.....	3(3-0)	.....

Health Ed. 244	3(3-0)	
Educ. 242	3(3-0)	
Sociology 231 .....	.....	5(5-0)
Educ. 250, 251	3(3-0)	5(1-8)
	<hr/>	<hr/>
	12	17
		13

COURSES FOR MAJOR AND MINOR STUDENTS*

222. The Modern Dance (Formerly 217). Credit 1(0-5).

A concentrated course in the Modern Dance which is required of all women physical education major and minor students.

223. Group Games and Football or Hockey (Formerly 226). Credit 2(1-4).

Practice and applied techniques of a large variety of games of lower organization of the circle, group and line type which might be suitable for playground, gymnasium, camp, and for adult gatherings. A concentrated study is also made of the techniques of football for men and hockey for women. Two different sections.

224. Field Laboratory Experiences (Formerly 254). Credit 1(0-5).

Opportunities for students to render service to children of various ages through the many community and school resources. Experience is gained through a study of the growth, development, and learning processes of the child through supervised activities. Prerequisite: Sophomore standing.

225. Rhythmics (Formerly 214). Credit 1(0-5).

Clog, tap, and folk dances characteristic of many countries, including Sweden, Hungary, Austria, Spain, France, Holland, and the United States.

226. Basketball, Stunts and Tumbling (Formerly 218). Credit 1(0-5).

Rules and Techniques of Basketball; concerted practice in skills and stunts and tumbling. Men's and Women's sections.

227. Swimming, Track and Field (Formerly 219a). Credit 1(0-5).

Basic Aquatic skills including the crawl, sidestroke, treading, floating, and diving. The skills and techniques of track and field. Men's and Women's sections. Prerequisite: 219.

228. Individual Sports (Formerly 213is). Credit 1(0-5).

Shuffleboard, handball, table tennis, badminton, croquet, archery, golf, and tennis.

*Open to non-majors only by permission of the Chairmen of the Department.

229. Combatives and Baseball. (Men). Credit 1(0-5).

A wide range of dual, group, and team combatives, running exercises, class formations, and concentrated practices in mastering the skills and techniques of the sport of baseball.

231. The Teaching of Football or Soccer and Hockey (Formerly 225, 225sh). Credit 2(1-2).

This history, rules, skills, techniques, methods of organizing practices, strategy, team offenses and defenses, and of various formations and systems of play. Two sections: Football for men, hockey and soccer for women.

232. The Teaching of Basketball (Formerly 225b). Credit 2(1-2).

The history and development of basketball, the skills, individual and team tactics, strategy, and the techniques of teaching basketball. The women's section provides in addition, instruction and practice in officiating basketball. Two different sections.

233. The Teaching of Swimming, and Lifesaving (Formerly 225W). Credit 2(1-2).

Skills required for the American Red Cross standard Lifesaving certificate; instruction in desirable methods and techniques for the teaching of swimming and aquatic events. Prerequisites: 219, 227, or equivalent.

234. The Teaching of Track and Baseball or Volleyball and Softball. Credit 2(1-2).

The history and development of each sport, the skills, individual and team offenses and defenses, strategy, and the techniques of teaching. Two sections: Track and baseball for men, volleyball and softball for women.

235. The Teaching of Stunts and Tumbling. Credit 2(1-2).

Methods and techniques for teaching a variety of stunts, tumbling, and apparatus activities.

236. The Teaching of Individual Sports (Formerly 225c). Credit 2(1-2).

Methods and techniques for teaching individual sports including shuffleboard, handball, golf, table tennis, badminton, archery, and tennis.

237. The Teaching of Social, Tap, and Square Dancing. (Required of Women.) (Formerly 225e). Credit 2(1-2).

Methods of teaching social, tap, and square dancing.

238. The Teaching of Net Games (Formerly 225n). Credit 2(1-2).

Methods of teaching a variety of net games, including volleyball, Newcomb, badminton, tennis, handball, and deck tennis.

239. History and Principles of Physical Education (Formerly 245.)
Credit 5(5-0).

The evolution of physical education from the earliest time to the present day. Consideration of the relationship of physical education to education and to national life and ideals through the different historical periods. A critical analysis of the scientific basis for physical education with applications of the aims and objectives to the modern concepts of education.

241. Kinesiology (Formerly 222). Credit 3(3-0).

A study of the bodily movements, types of muscular exercises and their relation to the problems of body development. Prerequisites: Zool. 131, 141.

242. Community Recreation (Formerly 232). Credit 3(3-0).

A study of city, state, and national organizations. Practice in the general principles and techniques in the organization and promotion of leisure activities for home, school, and community.

243. The Teaching of Physical Education. Same as Ed. 242. Credit 3(2-2).

Materials, methods, and practice in planning, organizing, and conducting physical education class activities. Prerequisites: 239 and an adequate number of other physical education courses.

244. Adapted Physical Education (Formerly 223). Credit 3(3-0).

Methods of examining and determining needs of the handicapped; activities suitable for individuals with abnormal body conditions, and the conduct of a program of restricted activities to meet their needs. Prerequisites: Zool. 131, P.E. 241.

247. Minor Problems in Health Education and Physical Education. Credit 3(3-0). Prerequisite: Permission of Major Professor.

A. Physical Education

B. Health Education

This course is designed primarily for seniors to provide them with an opportunity to investigate selected professional problems.

248. Problems in Physical Education (Formerly 253). Credit 3(3-0).

Special administrative problems in the organization of physical education programs and the coordination of its different phases pertinent to men and women of professional preparation. Current problems of physical education, including curriculum construction in the light of historical backgrounds, intramural activities, girls' athletics, athletic insurance, and athletic associations.

249. The Organization and Administration of Health and Physical Education. Credit 5(5-0).

Philosophy and policies in the administration of a health and physical education program, including the classification of students, the staff, teaching load, time schedule, finance, the gymnasium, locker-rooms, equipment, and inter-scholastic athletics. Prerequisites: 239 and an adequate number of other physical education courses.

250. Methods of Research and Evaluation in Health Education and Physical Education. Same as Ed. 250. Credit 3(3-0).

The purposes of this course are twofold: (1) to develop some competency in the use of various research methods as applied to health education and physical education, and (2) to study the methods of evaluating biological, social and physiological outcomes for health education and physical education.

HEALTH EDUCATION COURSES

Health Education 236. Principles of Health Education. Credit 3(3-0).

Principles for the teaching of health education in elementary and high schools. Close correlation with physical education and other subjects is outlined and encouraged. Prerequisite: H.E. 211, 234.

Health Education 238. First Aid and Safety (Formerly P.E. 238). Credit 3(2-2).

Techniques of first aid to the injured in the home, school, and community and the teaching of safety measures to be practiced in daily living; the prevention and care of injuries occurring in physical education classes and competitive sports. The Standard Red Cross First Aid Certificate is awarded upon successful completion of the course.

Health Education 244. The Teaching of Health Education (Formerly P.E. 244). Credit 3(3-0).

Methods, materials, and procedures for the teaching of health in the elementary and secondary schools. Prerequisites: H.E. 234, 239.

DEPARTMENT OF SOCIAL SCIENCES

FRENISE A. LOGAN, *Chairman*

In keeping with the general objectives of the College, the offerings of this department are designed to provide students with a cultural and humanistic preparation in the social sciences, to insure students a proper groundwork on which to build advanced technical and professional courses, and to stimulate those qualities and characteristics from which come intellectual vigor, broad human sympathy and constructive imagination.

THE SOCIAL SCIENCES

The social sciences at the Agricultural and Technical College of North Carolina include economics, geography, history, political science, and sociology.

A MAJOR IN THE SOCIAL SCIENCES

Students who wish to major in the social sciences or in a particular social science, may do so by selecting any one of two curricula: (1) Social Studies, or (2) Applied Sociology.

The *Social Studies* curriculum is specifically designed to prepare students for the teaching of history and/or any combination of the social sciences listed above, in junior and senior high schools.

The *Applied Sociology* curriculum is designed to meet the needs of students who are interested in social welfare, labor relations, government service, personnel administration, industrial relations, public relations and kindred vocations.

MAJOR IN HISTORY*

This major is designed especially for those desiring to pursue further study in the field of history.

Course and No.	Junior Year		
	Fall	Winter	Spring
History 211, 212, 222,	3(3-0)	3(3-0)	5(5-0)
History 232, 226, 233	5(5-0)	5(5-0)	3(3-0)
Sociology 231	5(5-0)	.....	.....
Minor or electives	6()	10()	10()
	19	18	18

*History 210, 213, and 222 which are required of all students during Freshman and Sophomore years must be included in the History Major. A minimum of 45 quarter hours in history is required for the History Major. In addition a total of 19 quarter hours in political science, sociology, economics or geography is required. It is suggested that students majoring in history take the majority of their electives in the social science and English field.

History 223 or 246 offered alternate years beginning with History 246 for the year 1961-62.

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
History 222	5(5-0)	.....	.....
History 238, 246 or 223, 237 .....	.....	3(3-0)	.....
Economics 236 .....	.....	3(3-0)	.....
Sociology 242 .....	.....	3(3-0)	.....
Political Science 232 or 231 .....	.....	.....	5(5-0)
Geography 244 .....	.....	3(3-0)	.....
Minor or electives	9()	10()	10()
	20	19	18

MAJOR IN APPLIED SOCIOLOGY*

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Economics 231, 232, 234	5(5-0)	5(5-0)	5(5-0)
Sociology 231, 232, 233	5(5-0)	5(5-0)	3(3-0)
Soc. 235, 234	3(3-0)	3(3-0)	.....
Psychology 200, 206, 205	5(5-0)	5(5-0)	5(5-0)
Political Science 231 .....	.....	.....	5(5-0)
Minor or Electives .....	.....	.....	.....
	18	18	18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Soc. 244, Ec. 236, Soc. 502	3(3-0)	3(3-0)	3(3-0)
Sociology 253; Econ. 254	3(3-0)	5(5-0)	.....
Sociology 242, 241 .....	.....	3(3-0)	3(3-0)
Political Science 232, Soc. 245 .....	.....	5(5-0)	5(2-6)
Minor or Electives	12()	3()	8()
	18	19	19

Suggested Electives

Sociology 502, 506	Education 225, 233
Economics 233	Psychology 202, 203
Geography 241, 242, 244	Religion 211, 212, 213
History 237, 246	Philosophy 222, 233

*Students expecting to major in Applied Sociology should take the required courses listed by the School of Education and General Studies. There are no additional subjects required for the major other than those listed in the above curriculum.

NOTE: It is advised that students majoring in Applied Sociology choose minor in a closely related field. The social science minor requires a minimum of 38 quarter hours. This would include 18 to 20 hours of history and 20 hours from economics, sociology, geography and political science. The 15 hours of history required of Freshmen and Sophomores may be included in the history minor. Suggested courses for the social science minor are: History 210, 213, 222 and 221 or 232. Economics 231, Sociology 231, Geography 240, and Political Science 231 or 232.

MAJOR IN SOCIAL STUDIES

This major is designed especially for persons planning to teach in the secondary schools.

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Hist. 226, 232 English Medieval History ..	.....	5(5-0)	5(5-0)
Ec. 231, 232 Economics	5(5-0)	5(5-0)	.....
or			
Hist. 211, 212	3(3-0)	3(3-0)	.....
Sociology 231, 232	5(5-0)	5(5-0)	.....
Minor or Electives	8()	3()	12()
	<hr/> 16	<hr/> 16-18	<hr/> 17

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Geo. 240 Principles of Geography .....	.....	5(5-0)	.....
Geo. 241 Regional Geography .....	.....	.....	5(5-0)
Hist. 233 Latin American History .....	.....	.....	3(3-0)
Pol. Sc. 231, Soc. 242	5(5-0)	3(3-0)	.....
Pol. Sc. 232 State Government .....	.....	5(5-0)	.....
Minor Electives	12()	5(5-0)	10()
	<hr/> 17	<hr/> 18	<hr/> 18

INTER-DEPARTMENTAL MINOR IN RECREATION LEADERSHIP

Inter-Departmental programs are designed to meet the needs of those students interested in the field of Recreational Leadership. The program cuts across departmental lines and utilizes the courses and resources of other departments and schools to balance and enrich the experiences for recreation minors.

Recreation Leadership Minor for Majors for Sociology. The department of Sociology and Physical Education cooperate in an inter-departmental minor in Recreational Leadership. The freshman-sophomore requirements are approximately the same as for any bachelor degree program in the School of Education and General Studies. In the Junior and Senior years, course work is drawn from other departments and schools to balance and enrich the student's minor program.

COURSES IN HISTORY

210. History of Civilization. Credit 5(5-0).

A general course surveying the main trends in history of western civilization.

211. Modern Europe. Credit 3(3-0).

A survey course dealing with major factors and movements in the history of modern Europe, growth of democracy and the expansion of Europe from 1500 to 1815. Lectures, collateral reading, special reports and map work.

212. Modern Europe. Credit 3(3-0).

A survey of the history and development of Europe from 1815 to the present.

213. History of the Negro. Credit 5(5-0).

This course includes a brief survey of the African background of the Negro, traces him from Africa to America; includes a study of his enslavement, with special emphasis on slavery in America, the Free Negro before 1860, abolition, and the Civil War with special emphasis on the part played by Negro troops, achievements since 1865, and forces in Negro progress.

221. United States History From 1492 to 1860. Credit 5(5-0).

A survey of the social, political and economic forces resulting in the developing of the American Nation.

222. United States History From 1860 to 1957. Credit 5(5-0).

A survey and synthesis of economic, social and political forces affecting the American Nation during this period, emphasizing the rise and effects of large scale industry and the emergence of the nation as a great power.

223. History of Reconstruction. Credit 3(3-0).

The period from 1860 to 1877. The industrial agricultural development, constitutional problems, the participation of the freedmen in reconstruction and the political issues of the period are studied thoroughly. Prerequisites: Hist. 221 and 222.

226. History of England. Credit 5(5-0).

A survey of the social and political development of England in the 16th, 17th, and 18th centuries.

232. Medieval History. Winter. Credit 5(5-0).

A history of Europe in the middle ages. Prerequisite: 15 hours of history.

233. History of Latin America. Spring. Credit 3(3-0).

A study of the rise and development of the Latin-American nations. Prerequisite: 15 hours of history or consent of instructor.

234. Contemporary American History. Credit 3(3-0).

Analysis of important problems in American history since World War I.

235. History of Eastern Europe. Credit 3(3-0).

A general course in the history of Eastern Europe, the Balkans and Russia from the period of the Romanoffs to the present.

237. American Constitutional History. Credit 3(3-0).

A study of the constitutional development of the United States from 1789 to the present time.

238. History of North Carolina. Credit 3(3-0).

A general survey of North Carolina from colonial times to the present.

246. History of the Far East. Credit 3(3-0).

A survey of the economic and political development of the far eastern countries with emphasis on the twentieth century. Prerequisite: 15 hours of history.

POLITICAL SCIENCE

211. Introduction to American Government. Credit 3(3-0).

A treatment of the historical development and organization of national government.

231. Federal Government. Fall. Credit 5(5-0).

A general introductory course in the government of the United States designed to acquaint the student with the more important facts of the organization and working of Federal institutions and to give a foundation for more advanced work in government. Prerequisite: 15 hours of Social Science or consent of instructor.

232. State and Local Government. Winter. Credit 5(5-0).

A study of state constitutions and of the structure and functions of state and local government in the United States. Prerequisite: 15 hours of Social Science or consent of instructor.

233. Municipal Government. Credit 3(3-0).

A study of the organization and problems of city government in the United States.

235. Party Politics and Pressures. Credit 3(3-0).

This course deals with modern political parties as instruments of popular government. An analysis is made of the role of parties in the formation of public opinion, and its transposition into public action.

236. Current International Relations. Credit 3(3-0).

A treatment of world problems of current interest among the countries of the world.

GEOGRAPHY

240. Principles of Geography. Credit 5(5-0).

A survey of the principles of geography.

241. Regional Geography of Anglo-American. Credit 5(5-0).

A study of the geographic regions of the United States and Canada.

242. Resources and Industries of United States. Credit 3(3-0).

A study of the physical resources of the United States and its possessions.

243. Economic Geography of Latin America. Credit 3(3-0).

The agricultural and industrial resources of Latin America, including the utilization of Negro labor, and the assimilation of African culture into Latin-American life.

244. Political Geography. Credit 3(3-0).

Theories of political geography; territorial changes and their political significance; problems in political unification; centralization and federation. Prerequisite: Political Science 211 or 231.

SOCIOLOGY

231. Principles of Sociology. Credit 5(5-0).

Examination of the basic concepts and Principles of Sociology with emphasis on scientific analysis of culture, social organization and personality. Prerequisite to all other courses in sociology. Required of all sociology majors.

232. Principles of Sociology. Credit 5(5-0).

Continuation of Sociology 231. Analysis and explanation of social groups and groupings, social stratification, and social institutions, population trends, social processes. Sociology 231 is a prerequisite required of all Sociology majors.

233. Community Organization. Credit 3(3-0).

A study of the demographic factors, family life, standards of living, social attitudes and values.

234. Juvenile Delinquency. Credit 3(3-0).

A study of criminogenic homes, communities and general conditions conducive to delinquency. Critical analysis of theories and research in the etiology of delinquent behavior. The relationship of cause and treatment is considered.

235. Criminology. Credit 3(3-0).

A course dealing with causative explanations and the nature of crime and criminal behavior; critical analysis of theories and research in the etiology of criminal behavior, and trends in the treatment and disposition of criminals.

241. Marriage and the Family. Credit 3(3-0).

A study of marriage problems and family living with special attention being given to items such as personality, courtship, family budgeting, divorce, parenthood.

242. Minority Groups. Credit 3(3-0).

An examination of the composition, status, and relations of racial and other minority groups in the United States and the world.

244. Introduction to Social Work. Credit 3(3-0).

An introductory course dealing with the various areas, processes and functions of social work. The various services and resources which the community provides for the social welfare of its citizens and of which the social worker makes use in the practice of his profession.

245. Field Work in Social Administration. Credit 5(2-6).

This course designed to provide practical experience and counseling in the application of principles and techniques in various areas of social administration under the direction of the instructor in cooperation with administrators of selected social agencies in the community. Two lectures per week, with three hours assigned for practical experience.

253. Introduction to Sociological Research. Credit 3(3-0).

Delineation of a research problem in Sociology; survey and uses of available sources of data; consideration of sampling procedures of sociology research; field methods for collecting original data; graphic presentation of statistical data. General prerequisites must include Sociology 231.

502. Current Economic and Social Problems. Credit 3(3-0).

A practical course in applied economics and sociology dealing with analysis of present trends in government, economics, industry, agriculture, and the social implications of these trends. Prerequisite: 15 hours of social science.

503. Research Problems. Credit 3(1-4).

Individual problems for research in each student's field of interest—labor, industry, agriculture, unemployment, old age, etc. Prerequisite: 15 hours of social science.

506. Population Problems. Credit 3(3-0).

Introduction to population study; the development of official population data; principal sources of information; methods of analysis; survey of contemporary population movements.

ECONOMICS

231. Principles of Economics. Credit 5(5-0).

This course surveys the general field of Economics. Prerequisite to all other Economics courses.

232. Economic Problems. Credit 5(5-0).

This course gives detailed consideration to major areas in modern economic life. The implications of public ownership, monopoly, organized labor and business combinations are stressed. Prerequisite: Economics 231 or consent of instructor.

233. Money and Banking. Credit 5(5-0).

A general survey of the role of banking in the economy; the nature of money and international exchange.

234. Labor Problems. Credit 5(5-0).

An introductory course dealing with the efforts of working people to improve their relative position in the economy; the influence of unionism and of governmental participation are emphasized.

236. Consumer Economics. Credit 3(3-0).

A course showing the importance of the consumer in the American economy, especially as a force for economic betterment; consumer problems of individuals are also discussed.

254. Statistical Methods in Social Science. Credit 5(5-0).

An introduction to research methods; social statistics; analysis of methods used by social scientists.

PHILOSOPHY

Philosophy 211. Introduction to Philosophy. Credit 3(3-0).

An introductory course covering such topics as theories of reality, the nature of mind and knowledge, and the higher values of life.

Philosophy 212. Ethics. Credit 3(3-0).

A course dealing with the study of moral origins and the interpretation of standards of value in private, business and public life.

Philosophy 213. Philosophy of Religion. Credit 3(3-0).

An introduction to the study of man's quest for wisdom about religious matters.

Philosophy 222. Logic. Credit 3(3-0).

An introductory study of rules of correct thinking and of their application to practical affairs.

Philosophy 223. Survey of Western Thought. Credit 3(3-0).

An introductory examination of systems of philosophic thought of selected outstanding representatives of the classical, medieval, and modern periods of philosophy. Prerequisite: One course in Philosophy or consent of the instructor.

RELIGION**Religion 211. Introduction to Bible Study. Credit 3(3-0).**

An introductory course in the history, literature and principal ideas of the Bible.

Religion 212. Orientation in the Study of Religion. Credit 3(3-0).

An examination of the nature, function, value, and basic concepts of religion.

Religion 213. The Church in Contemporary Society. Credit 3(3-0).

A brief survey of the development of the Christian church with emphasis upon the role of organized religion in contemporary affairs.

SCHOOL OF ENGINEERING

Department of Architectural Engineering

Department of Art

Department of Business

Department of Electrical Engineering

Department of Industrial Education

Department of Mathematics

Department of Mechanical Engineering

Department of Physics

SCHOOL OF ENGINEERING

J. M. MARTEENA, *Dean*

The organization of the School of Engineering includes, for the purposes of administration, the Departments of Architectural Engineering, Electrical Engineering, Mechanical Engineering, Engineering Mathematics, Engineering Physics, Business, Fine Arts, and Industrial Education. This organization enables the school to offer vocational, scientific and engineering instruction to help prepare students to meet the needs of the people, of industry and of the various technical and professional fields.

The curricula offered include four-year courses of study leading to the Bachelor of Science degree as well as professional courses required by the State Board of Education for the standard "A" grade teaching certificate in many fields.

To keep pace with the increasing demands of industry, society and progressive education, the school is rapidly improving its staff and expanding its facilities and physical plant.

ADMISSION TO THE SCHOOL OF ENGINEERING

The admission requirements are generally the same as those given for entrance to the freshman class. One and one-half years of algebra, one year of plane geometry and one-half year of solid geometry are required for students electing a curriculum leading to a B.S. degree in engineering, mathematics and physics. Students admitted with conditions in any subjects will be required to remove them during their freshman year.

ADVANCED STANDING

Students who have attended a college of approved standing will be given appropriate credit for work completed there, upon the presentation of the proper certificate to the Registrar, who will determine the credits which are transferable toward the curriculum which the student wishes to follow.

REQUIREMENTS FOR GRADUATION

The requirements for graduation in any division of the School of Engineering are the same as the General Graduating Requirements.

OUTLINE OF THE FIRST YEAR'S WORK OF ALL FOUR-YEAR CURRICULA IN ENGINEERING

In order to permit all students in the School of Engineering to find out definitely what courses they desire to pursue, the first year of all four-year curricula in engineering or industrial arts is made uniform.

An inspection trip to visit such industrial installations as a hydro-electric plant, a turbo-electric plant, a steel or aluminum manufacturing and fabrication plant, outstanding construction projects, etc., will be required for graduation in all curricula of engineering.

The inspection trip will be planned by the heads of the various departments of engineering for senior students and will take place during the Spring quarter of each year.

A special fee will be charged all senior students in engineering to cover expenses for this trip. See fees and expenses.

Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112, 113*	5(3-4)	5(3-4)	5(3-4)
Mathematics 311, 312, 313	5(5-0)	5(5-0)	5(5-0)
English 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Mechanical Drawing, M.E. 311, 312	3(0-6)	3(0-6)	.....
Descriptive Geometry, M.E. 314 .....	.....	.....	3(1-4)
Electives**	1	1	1
	<hr/> 19	<hr/> 19	<hr/> 19

*Students in industrial education are not required to take chemistry 113 and will take Ind. Ed. 325 and music in their freshman year.

**Freshman and sophomore male students who are not veterans are required to enroll in military or air science each quarter of their freshman and sophomore years.

NOTE: ROTC students registered in certain designated courses may be required to take only the drill in some of the ROTC courses.

DEPARTMENT OF ARCHITECTURAL ENGINEERING

WILLIAM A. STREAT, *Chairman*

The objective of the curriculum in Architectural Engineering is to provide sound basic training in the engineering design and construction of buildings. A considerable portion of the program is devoted to fundamental and applied science and to selected courses in the humanities. Study is devoted to all forms of building construction with major emphasis placed on the structural and mechanical aspects of architecture. Sufficient work in architectural design, art, and architectural history is required so that the student acquires basic knowledge of the utilitarian phases of planning.

The four-year curriculum provides an integrated educational experience and leads to the degree of Bachelor of Science in Architectural Engineering.

Freshman Year

(See First Year's Curricula of Engineering, Page 190.)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Freehand Drawing, Art 311, 313	3(0-6)	.....	3(0-6)
Humanities, Elective .....	.....	3(3-0)	.....
General Physics 321, 322, 323	5(3-4)	5(3-4)	5(3-4)
Mathematics 321, 322, 323	5(5-0)	5(5-0)	5(5-0)
Arch. Elements, A.E. 321	4(0-8)	.....	.....
Arch. Design, A.E. 322, 323 .....	.....	4(0-8)	4(0-8)
Engineering Problems, M.E. 318, 319	1(0-2)	1(0-2)	.....
Electives*	1	1	1
	<hr/> 19	<hr/> 19	<hr/> 18

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mechanics, M.E. 331, 332, 333	5(5-0)	5(5-0)	5(5-0)
Arch. Design, A.E. 331, 332, 333	4(0-8)	4(0-8)	4(0-8)
History of Arch., A.E. 325, 326, 327	3(3-0)	3(3-0)	3(3-0)
Materials and Methods of Construction, A.E. 334, 335, 336	3(0-6)	3(0-6)	3(0-6)
Structural Elements, A.E. 337 .....	.....	2(1-2)	.....
Theory of Structures, A.E. 338 .....	.....	.....	2(1-2)
Electives	3()	3()	3()
	<hr/> 18	<hr/> 20	<hr/> 20

*Freshman and sophomore male students who are not veterans are required to enroll in military or air science each quarter of the freshman and sophomore years.

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Theory of Structures, A.E. 341, 342	5(2-6)	5(2-6)	-----
Reinforced Concrete Theory, A.E. 351	3(3-0)	-----	-----
Structural Design, A.E. 343	-----	-----	5(2-6)
Reinforced Concrete Design, A.E. 352 ,...	-----	3(3-0)	-----
Surveying, Mathematics 324	-----	-----	3(1-4)
Heating and Ventilating, M.E. 334, 335 ...	3(3-0)	3(3-0)	-----
Testing Materials, M.E. 346	2(0-4)	-----	-----
Elec. Equip. of Bldgs., A.E. 344	3(3-0)	-----	-----
Building Sanitation, A.E. 349	-----	-----	3(3-0)
Economics 231, 234	-----	5(5-0)	5(5-0)
Professional Practice, A.E. 346	2(4-0)	-----	-----
Electives	3()	3()	3()
Inspection Trip	-----	-----	0(0-0)
	<hr/> 21	<hr/> 19	<hr/> 19

COURSES IN ARCHITECTURAL ENGINEERING

A.E. 321. Architectural Elements. Credit 4(0-8).

Fundamentals of architectural planning and design. Principles of plan, elevation, and section. Principles of architectural perspectives, shades and shadows. Prerequisite: M.E. 314.

A.E. 322. Architectural Design. Credit 4(0-8).

Problems in the design of small buildings with exercises in space organization and the study of architectural composition. Prerequisite: A.E. 321.

A.E. 323. Architectural Design. Credit 4(0-8).

Space organization of building requirements, with study of environmental influences including the influences of climate and topography. Prerequisite: A.E. 322.

A.E. 325. History of Architecture. Credit 3(3-0).

The early architecture and civilizations of Egypt, Western Asia, Greece, and Rome, including architectural developments by the Early Christians and Byzantine builders. Prerequisite: A.E. 323.

A.E. 326. History of Architecture. Credit 3(3-0).

The architectural and civilization of Medieval Europe. Prerequisite: A.E. 325.

A.E. 327. History of Architecture. Credit 3(3-0).

Architecture and civilization of Renaissance Europe, Early American architecture and civilization and study of selected examples of architecture in the Americas and Europe after A.D. 1800. Prerequisite: A.E. 326.

A.E. 328. History of Architecture. Credit 3(3-0).

An analytical study of Contemporary Architecture. Prerequisite: A.E. 327. (Open to art majors through consent of the instructor.)

A.E. 331. Architectural Design. Credit 4(0-8).

Principles of space analysis, orientation and site planning, exercises in space organization of building requirements and the integration of space design with building construction. Development of scale models. Prerequisite: A.E. 323.

A.E. 332. Architectural Design. Credit 4(0-8).

Problems in space organization, design, and circulation; group planning. Principles which govern the choice of materials, and the organization of structural components. Prerequisite: A.E. 331.

A.E. 333. Architectural Design. Credit 4(0-8).

Problems in space design, and building construction, based on an analysis of space requirements as determined from economic, and social data. Prerequisite: A.E. 332.

A.E. 334. Materials and Methods of Construction. Credit 3(0-6).

Non-fire resistant construction; framing methods for small buildings, characteristics of materials, standard detailing and dimensioning. Prerequisite: A.E. 323.

A.E. 335. Materials and Methods of Construction. Credit 3(0-6).

Semi-fireproof construction, framing methods, material characteristics, standard detailing and dimensioning. Prerequisite: A.E. 334.

A.E. 336. Materials and Methods of Construction. Credit 3(0-6).

Fireproof construction, framing methods, material characteristics, fireproofing, standard detailing and dimensioning. Prerequisite: A.E. 335.

A.E. 337. Structural Elements. Credit 2(1-2).

Graphical and algebraic analysis of forces, truss stresses, moments of inertia, centroids. Prerequisite: M.E. 331.

A.E. 338. Theory of Structures. Credit 2(1-2).

Graphical and algebraic analysis of bending moments, shears and deflections, kerns, pressures, shears in masonry structures. Bending

theory, and design of simple structural members of timber, steel and masonry. Prerequisite: A.E. 337 and enrollment in M.E. 333.

A.E. 341. Theory of Structures. Credit 5(2-6).

The elastic theory, bending in unsymmetrical sections, columns, analysis of steel trusses and plate girders, truss deflections by methods of virtual work and Williot mohr; special beam and girder connections. Prerequisite: M.E. 333 and A.E. 338.

A.E. 342. Theory of Structures. Credit 5(2-6).

Analysis of indeterminate portal frames and bents, virtual work, slope deflection, and moment distribution methods applied to the solution of statically indeterminate problems; introduction to plastic design for structural steel. Prerequisite: A.E. 341.

A.E. 343. Structural Design. Credit 5(2-6).

Design of timber and steel building structures. Prerequisite: A.E. 342.

A.E. 344. Electrical Equipment of Buildings. Credit 3(3-0).

Characteristics of electrical distribution systems, computation of electrical loads, theory and design of wiring systems, selection of conductors and equipment, theory and design of lighting systems. Prerequisite: A.E. 335.

A.E. 346. Professional Practice. Credit 2(4-0).

Procedures of professional practice, registration, ethics, professional services, contracts, bonds, liens, insurances, and bidding procedures, supervision and administration of construction operations; office management and accounting. Seminar. Prerequisite: Junior Classification.

A.E. 347. Architectural Design. Credit 5(0-10).

Problems in space analysis, and design; the choice of materials, economic considerations and methods of construction. Prerequisite: A.E. 333.

A.E. 348. Architectural Design. Credit 5(0-10).

Space analysis, and design with emphasis on site planning. Prerequisite: A.E. 333.

A.E. 349. Building Sanitation. Credit 3(3-0).

Principles of plumbing, including venting, drainage, demand and load calculations, water distribution, pipe sizing, storm drainage and sprinkler systems. Prerequisite: A.E. 335.

A.E. 351. Reinforced Concrete Theory. Credit 3(3-0).

Reinforced concrete theory as applied to building structures. Theory of design for beams, slabs and columns. Prerequisites: A.E. 338 and M.E. 333.

A.E. 352. Reinforced Concrete Design. Credit 3(3-0).

Design of reinforced concrete building structures. Continuity in reinforced concrete, footings and retaining walls. Prerequisite: A.E. 351.

DEPARTMENT OF ART

LEROY F. HOLMES, *Chairman*

GENERAL STATEMENT

The objectives of this department are as follows:

- (a) To discover and develop the latent talent of students for artistic expression and lay a foundation for careers as creative artists.
- (b) To meet a growing demand for specially trained art teachers in public schools and colleges.
- (c) To develop taste and discrimination in choice of materials used in everyday life which will find expression in more beautiful homes and gardens, schools, playgrounds and other public works.
- (d) To provide a cultural activity leading to a more worthy use of leisure time.

Students in other departments desiring special work in art may, by arrangement with the instructor, take any course listed under art.

CURRICULUM OF ART**Freshman Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Mathematics 311, 312, History 213	5(5-0)	5(5-0)	5(5-0)
Chemistry 111, 112, Art 320	5(5-0)	5(5-0)	3(1-5)
Art 311, 312, 313	3(0-6)	3(0-6)	3(0-6)
Physical Education	1(0-2)	1(0-2)	1(0-2)
Electives* .....	.....	.....	2()
	<hr/>	<hr/>	<hr/>
	19	19	19

*Freshman and sophomore male students who are not veterans are required to enroll in military or air science each quarter of the freshman and sophomore years.

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
French or German	5(5-0)	5(5-0)	5(5-0)
Mech. Engr. 311, 312, 314	3(0-6)	3(0-6)	3(0-6)
History 211, 212	3(3-0)	.....	3(3-0)
Art 314, 315, 316	2(2-0)	2(2-0)	2(2-0)
Art 317, 318, 319	3(0-6)	3(0-6)	3(0-6)
Physical Education	1(0-2)	1(0-2)	1(0-2)
Electives*	2()	2( )	.....
	19	16	17

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
History 221 or 222, Art 341	5(5-0)	3(0-6)	.....
English Elective .....	.....	.....	5(5-0)
Art 347, 348, 349	3(0-6)	3(0-6)	3(0-6)
Art 326, 327 .....	.....	2(2-0)	2(2-0)
Art 337, 338, 339	3(0-6)	3(0-6)	3(0-6)
Art 331, 332	2(0-4)	2(0-4)	.....
Electives	5()	5()	5()
	18	18	18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
History 231, 232	5(5-0)	5(5-0)	.....
Art 328, 329	2(2-0)	2(2-0)	.....
Art 323, 330	3(0-6)	3(0-6)	.....
Health Education 234 .....	.....	.....	5(5-0)
Art 321, 322	3(0-6)	3(0-6)	.....
Art 334	2(0-6)	.....	.....
Electives	5()	5()	10()
	20	18	15

NOTE: The junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be done in consultation with the student's adviser.

311. Freehand Drawing. Credit 3(0-6).

A study of the fundamental principles of drawing as a useful mode of visual expression. Selected problems involving basic considerations of line, mass and color are presented for analysis and laboratory practice.

*Freshman and sophomore male students who are not veterans are required to enroll in military or air science each quarter of the freshman and sophomore years.

312. Lettering and Poster Design. Credit 3(0-6).

A comprehensive study of the art of lettering with speedball pens, the principles of layout, poster construction, and general advertising.

313. Water-color Painting. Credit 3(0-6).

Provides a working knowledge of color both from the standpoint of its use and enjoyment. Various theories of color are analyzed along with drill on the techniques of water-color painting. Prerequisite: 311.

314. Art Appreciation. Credit 2(2-0).

An introductory course to the study of fine arts. Basic qualities of various forms of artistic expression are explained. Emphasis is placed on the application of art principles in everyday life.

315. History of Art. Credit 2(2-0).

A general introduction to the history of art beginning with an examination of Egyptian, Mesopotamian, Aegean, Greek, and Roman art in terms of their extent monuments and culminating with the climax of medieval art in the Gothic period.

316. History of Art. Credit 2(2-0).

A continuation of art 315 with emphasis on the development of art from the Italian Renaissance to the present by means of analysis and comparison of works of representative artists.

317. Beginning Design. Credit 3(0-6).

An introduction to visual design based upon an analysis of the aims, elements, principles, and sources of design and their application in a variety of media.

318. Intermediate Design. Credit 3(0-6).

A continuation of art 317 with emphasis on the expressive possibilities of the elements of design and on the development of the student's creative ability.

319. Advanced Design. Credit 3(0-6).

A continuation of art 318, with consideration given to three dimensional as well as two dimensional problems. Students are encouraged in the experimental use of materials and are required to find individual and complete solutions to problems through the various stages of research, planning and presentation. Emphasis is placed on technical perfection and the development of professional attitudes.

320. Anatomy. Credit 3(1-5).

A study of the human figure with emphasis on anatomy, body structure and human proportions, draped and undraped figures at rest and in action.

321. Commercial Art. Credit 3(0-6).

The handling of various media used in commercial art—laboratory drills in sketching and rendering in pen and ink and wash. Prerequisite: 313.

322. Commercial Art Design. Credit 3(0-6).

Advertising design. Water color and show-card color are used with continued drills in laboratory techniques suitable for reproduction and cartooning. Prerequisite: 321.

323. General Crafts. Credit 3(0-6).

Introduction to craft processes, weaving, metalwork, leather, etc.

326. History of Art. Credit 2(2-0).

Art of the Italian Renaissance. The study of painting, sculpture, and architecture in Italy from 1300 to 1600.

327. History of Art. Credit 2(2-0).

Art of the Northern Renaissance. A study of painting, sculpture, and architecture from 1400 to 1600 in the Netherlands, Germany, France, Spain, and England.

328. Art History. Credit 2(2-0).

Baroque Art. The study of painting, sculpture, and architecture in Italy, the Netherlands, France, Spain, and Germany from 1600 to 1800.

329. History of Art. Credit 2(2-0).

Modern Art. European and American art from 1875 to the present.

330. Introduction to Graphic Arts. Credit 3(0-6).

Introduction to printmaking processes. Production of prints in varied media, woodcuts, serigraphs, drypoint, etchings, and lithographs.

331. Composition. Credit 2(0-4).

A study of the basic principles of pictorial composition or designing the picture with definite consideration of the requirements of commercial art; drills in abstract arrangements of dark and light are given.

332. Composition. Credit 2(0-4).

A continuation of 331 with emphasis on the study of accessories, figure arrangement, and expression. Prerequisite: 331.

334. Portrait. Credit 2(0-4).

A study of the technique of portraiture. Studies are made from living models with emphasis on composition and expression.

337. Elementary Ceramics. Credit 3(1-5).

Study of the historical development, materials and processes, and structural forms as well as simple exercises in modeling in clay. Supplementary reading and laboratory practice is required. Fall.

338. Advanced Ceramics. Credit 3(0-6).

A continuation of art 337 with emphasis in studio techniques. Review of methods of hand-building; introduction of potter's wheel, casting and glazing. Each student is given experience in firing the kiln.

339. Jewelry and Metalwork. Credit 3(0-6).

The design and technical essentials of jewelry making and metalwork.

341. Figure Drawing. Credit 3(0-6).

A study of the human figure from life. A study is made of the full length figure with emphasis on proportion, action and modeling in full values.

347. Oil Painting. Credit 3(0-6).

Study of oil painting with emphasis placed on the technique of oil painting still life, landscapes and portraits.

348. Oil Painting. Credit 3(0-6).

A continuation of 347 with emphasis on the development of original themes. Prerequisite: 347.

349. Oil Painting. Credit 3(0-6).

A continuation of 348 with emphasis on originality of subjects and treatment. Prerequisite: 348.

501. Public School Art. Credit 3(3-0).

Study of materials, methods and procedures in teaching art in the public schools. Special emphasis is placed on selection and organization of materials, seasonal projects, the lesson plan and correlation, lectures, demonstrations, assigned readings. Summer Quarter.

502. Drawing and Painting for Graduate Students. Credit 3(0-6).

Study of basic consideration of line-form content-technique. Summer Quarter.

503. Seminar In Art History. Credit 3(3-0).

This course is a round table discussion with student reports. Prerequisite: Consent of the instructor.

504. Studio Techniques. Credit 3(0-6).

Problems in laboratory, practices of interest to class are selected and studied.

- (a) Water color
- (b) Pastel
- (c) Oil Painting

DEPARTMENT OF BUSINESS

T. MAHAFFEY, *Chairman*

OBJECTIVES OF THE DEPARTMENT

The curricula of the Department of Business are designed to develop students with abilities, attitudes, understandings and concepts essential for leadership in business, industry, education, and government. In addition to the basic lower level program required of all freshmen and sophomores, several fields of concentration are provided to meet the varying needs for specialization at the upper level for juniors and seniors. Students are required to include in their programs courses which will give them a broad liberal education directed toward preventing the narrowing effects of overspecialization. Though professional competence in one's major concentration in the field of business is of primary importance, the student should be stimulated to participate actively in community affairs. He should also be continuously made aware of and exposed to an atmosphere of gracious living.

To serve the youth of North Carolina and the nation, the Department of Business endeavors to achieve the following objectives:

1. To develop the abilities and concepts essential for leadership in business, especially in the field of major concentration.
2. To prepare for graduate study.
3. To provide an understanding of economic, political and social values necessary for effective leadership.
4. To maintain contacts with the many institutional publics through the departmental internship programs, clinics, workshops, meetings, institutes, and conferences. The cooperation of persons actively engaged in business, in the professions and in government is desirable in the development of a well-rounded student and in the solution of common problems.
5. To provide within the environment of business an introduction to the atmosphere of gracious living.

REQUIREMENTS FOR GRADUATION

Students in the Department of Business who meet the general requirements of the College and who complete satisfactorily the chosen curriculum in the Department, are awarded degrees appropriate to their curricula. Each curriculum requires a minimum of 200 quarter hours of credit.

DEGREES OFFERED

The Department of Business offers curricula leading to the following degrees: Bachelor of Science in Business Administration, Bachelor of Science in Business Education and Bachelor of Science in Secretarial Science.

A two-year program in Secretarial Science leads to the degree of Associate in Science in Secretarial Science.

PROFICIENCY TESTS

Students who have had some training in shorthand and typewriting will be given an opportunity to take proficiency tests to determine their placement in these courses.

BUSINESS ADMINISTRATION

The curriculum in business administration has been developed to provide the student with a broad academic background, and a sound business training. In addition to courses in management, the student takes courses in general economics, labor problems, applied economics, finance, insurance, accounting, and statistics.

Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Eng. 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Chem. 311, 312, 315	5(5-0)	5(5-0)	5(5-0)
Chem. 111, 112 or Phy. 311, 312	5(3-4)	5(3-4)	.....
or			
Botany 111 and Zoology 111	5(3-4)	5(3-4)	.....
Sec. Sc. 317, 318, 319	2(0-5)	2(0-5)	2(0-5)
Phy. Ed. 210a, b, c	1(0-2)	1(0-2)	1(0-2)
B.A. 351 .....	.....	.....	5(5-0)
	18	18	18

Freshman and sophomore male students who are not veterans are required to enroll in Military or Air Science each quarter.

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
B.A. 323 .....	.....	.....	5(5-0)
Pol. Sc. 233	3(3-0)	.....	.....
Acct. 320, 321, 322	5(5-0)	5(5-0)	5(5-0)
English 224 .....	.....	3(2-2)	.....
Econ. 231, 232, B.A. 343	5(5-0)	5(5-0)	5(5-0)
Art or Music Appreciation	2(2-0)	2(2-0)	2(2-0)
Phy. Ed. 220a, b, c	1(0-2)	1(0-2)	1(0-2)
Electives	2()	2( )	.....
	18	18	18

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Acct. 331, 332, 323	3(3-2)	3(3-2)	5(5-0)
B.A. 331, 332, 333	3(3-0)	3(3-0)	3(3-0)
B.A. 339 .....	.....	3(3-0)	.....
B.A. 356, 352, 354	5(5-0)	3(3-0)	3(3-0)
Geo. 241 or 242	5(5-0)	.....	.....
Econ. 234 .....	.....	.....	5(5-0)
Sec. Sc. 324 .....	.....	2(0-4)	.....
Electives	3()	3()	3()
	19	17	19

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
B.A. 346 .....	.....	.....	3(3-0)
Math. 318 .....	.....	.....	5(5-0)
B.A. 355, 357, 353	5(5-0)	5(5-0)	5(5-0)
Acct. 352 .....	.....	5(5-0)	.....
Econ. 236 .....	.....	3(3-0)	.....
B.A. 344	3(3-0)	.....	.....
B.A. 358	2(0-10)	.....	.....
Electives	3()	3()	3()
	13	16	16

Recommended Electives

Accounting 331, 332—Intermediate Accounting	3 hrs. ea.
(Fall) (Winter)	
Agricultural Econ. 146—Land Income	2 hrs.

BUSINESS EDUCATION

The business education curriculum is designed to prepare students to meet state certification requirements for teachers of:

Typewriting and Shorthand

or

Bookkeeping and Basic Business

Students who plan to teach in secondary schools should select this curriculum not later than the last quarter of the freshman year in order that certification requirements may be met. Before a student will be admitted to Directed Teaching, he must present a minimum average of two grade points for each credit hour of work in all Business Education and Secretarial Science courses taken in the department.

Freshman Year

Same as Freshman Year for Business Administration.

TEACHERS OF SHORTHAND AND TYPEWRITING

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Eng. 224, 244	3(2-2)	3(3-0)	-----
History 221	-----	-----	5(5-0)
Art 314, 315, 316	2(2-0)	2(2-0)	2(2-0)
Phy. Ed. 220a, b, c	1(0-2)	1(0-2)	1(0-2)
Sec. Sc. 320, 325, 324	2(0-3)	2(0-3)	2(0-4)
Sec. Sc. 314, 315, 316	5(5-0)	5(5-0)	5(5-0)
Psy. 200, 202, 203	5(5-0)	3(3-0)	3(3-0)
Phy. 200, 202, 203	5(5-0)	3(3-0)	3(3-0)
Ed. 222	-----	3(3-0)	-----
	18	19	18

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
B.A. 352	-----	3(3-0)	-----
Econ. 231, 232	5(5-0)	5(5-0)	-----
Sec. Sc. 321, 322, 323	5(5-0)	3(3-0)	5(2-8)
Guidance 501, Ed. 224, 237	3(3-0)	3(3-0)	3(3-0)
B.E. 336, 350	-----	3(3-0)	5(5-0)
B.A. 331	3(3-0)	-----	-----
Acct. 301, 302, 303	3(3-0)	3(3-0)	3(3-0)
	19	20	16

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
B.A. 344	-----	-----	3(3-0)
Econ. 236	-----	3(3-0)	-----
Sec. Sc. 329	-----	2(0-4)	-----
B.E. 352	5(5-0)	-----	-----
B.A. 339, 346	-----	3(3-0)	3(3-0)
Sec. Sc. 326, 327	-----	2(2-0)	2(0-13)
Music 211, 212	-----	2(2-0)	2(2-0)
H.Ed. 234	-----	5(5-0)	-----
Electives	3()	-----	6()
	8	17	16

Suggested electives from Government, Economics, History, Sociology.

TEACHERS OF BOOKKEEPING AND GENERAL BUSINESS

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Eng. 224, 244	3(2-2)	3(3-0)	-----
Art 314, 315, 316	2(2-0)	2(2-0)	2(2-0)
Phy. Ed. 220a, b, c	1(0-2)	1(0-2)	1(0-2)
Sec. Sc. 320, 325, 324	2(0-3)	2(0-3)	2(0-4)
Acct. 320, 321, 322	5(5-0)	5(5-0)	5(5-0)
Psy. 200, 202, 203	5(5-0)	3(3-0)	3(3-0)
Ed. 222	-----	3(3-0)	-----
Hist. 221	-----	-----	5(5-0)
	18	19	18

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Econ. 231, 232, 233	5(5-0)	5(5-0)	5(5-0)
Acct. 323, 331, 332	3(3-2)	3(3-2)	5(5-0)
Guidance 501, Ed. 224, 237	3(3-0)	3(3-0)	3(3-0)
B.A. 339	-----	3(3-0)	-----
B.E. 336, 351	3(3-0)	-----	5(5-0)
B.A. 331, 332	3(3-0)	3(3-0)	-----
B.A. 344, 352	3(3-0)	3(3-0)	-----
	20	20	18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Music 211, 212	-----	2(2-0)	2(2-0)
Geog. 241 or 242	-----	5(5-0)	-----
B.E. 352	5(5-0)	-----	-----
Econ. 236, 234	-----	3(3-0)	5(5-0)
B.A. 346	-----	-----	3(3-0)
Sec. Sc. 326, 327	2(2-0)	2(0-13)	-----
H.Ed. 234	-----	-----	5(5-0)
Electives	-----	3()	3()
	7	15	18

Suggested electives from Government, Economics, History and Sociology.

SECRETARIAL SCIENCE

The Secretarial Science curriculum is designed for the student who wishes to reach a responsible secretarial position. Emphasis is placed upon the development of superior skill in shorthand, typewriting, office appliances, and business correspondence. Courses in accounting, economics, management, business law, and English are included in order that the student may come to view business as an integrated activity. Through such a basic understanding secretarial workers can expect to take advantage of the opportunities for advancement likely to be offered them.

The curriculum for Secretarial Science majors is as follows:

Freshman Year

Same as Freshman Year for Business Administration.

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Sec. Sc. 314, 315, 316	5(5-0)	5(5-0)	5(5-0)
Sec. Sc. 320, 325	2(0-3)	2(0-3)	.....
English 224, 244	3(2-2)	3(3-0)	.....
Art or Music Appreciation	2(2-0)	2(2-0)	2(2-0)
Physical Education 220a, b, c	1(0-2)	1(0-2)	1(0-2)
History (selected by student) .....	.....	5(5-0)	5(5-0)
Psychology 200	5(5-0)	.....	.....
Elective .....	.....	.....	3()
	<hr/> 18	<hr/> 18	<hr/> 16

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Sec. Sc. 321, 322, 323	5(5-0)	3(3-0)	5(2-8)
Sec. 329	2(0-4)	.....	.....
Sec. Sc. 326, 324 .....	.....	2(0-4)	2(2-0)
Acct. 301, 302, 303	3(3-0)	3(3-0)	3(3-0)
Economics 231, 232	5(5-0)	5(5-0)	.....
B.A. 339, 323 .....	.....	3(3-0)	5(5-0)
Electives .....	.....	2()	3()
	<hr/> 15	<hr/> 18	<hr/> 18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Sec. Sc. 328	3(3-0)	-----	-----
Sec. Sc. 327	2(0-13)	-----	-----
B.A. 331, 332, 346	3(3-0)	3(3-0)	3(3-0)
B.A. 356, 352, 353	5(5-0)	3(3-0)	5(5-0)
English 220	-----	5(5-0)	-----
Pol. Sc. 233	3(3-0)	-----	-----
Mus. or Art	-----	2(2-0)	2(2-0)
Elective	3()	3()	3()
	<hr/> 19	<hr/> 16	<hr/> 13

SUGGESTED PROGRAM FOR SECRETARIES
AND STENOGRAPHERS

Two-Year Course

First Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Eng. 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Sec. Sc. 317, 318, 319	2(0-5)	2(0-5)	2(0-5)
Math. 315	-----	5(5-0)	-----
Sec. Sc. 314, 315, 316	5(5-0)	5(5-0)	5(5-0)
B.A. 351	-----	-----	5(5-0)
Sec. Sc. 324	2(0-4)	-----	-----
Electives	3()	-----	-----
	<hr/> 17	<hr/> 17	<hr/> 17

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Sec. Sc. 320, 325, 327	2(0-3)	2(0-3)	2(0-13)
Eng. 224, 244	3(3-0)	-----	3(2-2)
Sec. Sc. 321, 322, 323	5(5-0)	3(3-0)	5(2-8)
Sec. Sc. 329, 326	-----	2(0-4)	2(2-0)
B.A. 339	-----	3(3-0)	-----
B.A. 352	-----	3(3-0)	-----
Electives	6()	3()	5()
	<hr/> 16	<hr/> 16	<hr/> 17

**COURSES IN ACCOUNTING, BUSINESS ADMINISTRATION,
BUSINESS EDUCATION, AND SECRETARIAL SCIENCE**

Courses in Accounting

301. Elements of Accounting and Bookkeeping. Credit 3(3-0).

Familiarization with basic accounting concepts, principles and theory. For Non-Business Administration majors.

302. Elements of Accounting and Bookkeeping. Credit 3(3-0).

Mechanics of record keeping, statement preparation and use. Prerequisite: Accounting 301.

303. Elements of Accounting and Bookkeeping. Credit 3(3-0).

Application of accounting and bookkeeping practices through use of practice sets of typical business organization. Prerequisite: Accounting 302.

320. Introductory Accounting. Credit 5(5-0).

A study of the fundamental principles of accounting, embracing the theory of double-entry system recording and its application to business transactions through the complete accounting cycle.

321. Introductory Accounting. Credit 5(5-0).

Continuation of Accounting 320. Accounting for notes, prepaid and accrued items, taxes, and introduction to partnerships.

322. Introductory Accounting. Credit 5(5-0).

Continuation of Accounting 321. Introduction to corporate and manufacturing accounts.

323. Cost Accounting. Credit 5(5-0).

Elements and principles of cost accounting as applied to job lot, process, and standard costs systems. Prerequisite: Accounting 322.

331. Intermediate Accounting. Credit 3(3-2).

Advanced training in the theory of accounts, recording of accounts data, and preparation of accounting statements. Prerequisite: Accounting 323.

332. Intermediate Accounting. Credit 3(3-2).

Continuation of Accounting 331, with emphasis on analysis and interpretation of accounting data. Prerequisite: Accounting 331.

352. Federal Tax Accounting. Credit 5(5-0).

Federal income tax laws in relation to accounting and the preparation of tax returns. Prerequisite: 323.

Courses in Business Administration**323. Principles of Marketing. Credit 5(5-0).**

General survey of the field of Marketing. Consideration is given to the marketing process and marketing functions.

331. Introductory Business Law I. Credit 3(3-0).

Acquaints the student with the origin, development and classification of law and with courts and court procedure.

332. Introductory Business Law II. Credit 3(3-0).

Considers the law governing negotiable instruments, business organization and agency. Prerequisite: B.A. 331.

333. Advanced Business Law. Credit 3(3-0).

Primarily concerned with security relationships. Government and social control of business are also considered. Prerequisite: B.A. 332.

339. Business Correspondence. Credit 3(3-0).

Principles and practices of effective business communications. Practice in writing sales letters, letters of complaints, collection, and application. Prerequisite: Sec. Sci. 319 or consent of instructor.

343. Money, Credit, and Banking. Credit 5(5-0).

Principles of money, credit, and banking from the viewpoints of the banker, the businessman and the public. Prerequisite: Econ. 231, 232.

344. Principles of Salesmanship. Credit 3(3-0).

Effective selling techniques and major problems of sales organization and management.

345. Principles of Advertising. Credit 3(3-0).

Economics of advertising, advertising techniques and media are considered.

346. Principles of Retailing. Credit 3(3-0).

The course is concerned with retail store organization and operation.

351. Introduction to Business. Credit 5(5-0).

Survey of the field of business to acquaint the student with the organization, problems, and activities of business in a capitalistic system.

352. Office Management. Credit 3(3-0).

Consideration is given to office organization and management, office location and layout, office systems and procedures, and office equipment. Prerequisite: Sec. Sci. 324.

353. Personnel Administration. Credit 5(5-0).

Study of the modern personnel department and basic principles and procedures in employment and personnel management. Prerequisite: B.A. 351 or consent of instructor.

354. Business Management and Problems. Credit 3(3-0).

Study of the fundamentals of business organization and management and the resultant problems. Prerequisite: B.A. 351.

355. Financial Organization and Operation. Credit 5(5-0).

The financial structure and management of business are analyzed. Capitalization, methods of obtaining capital stocks, bonds, business failures and reorganization are treated. Prerequisite: Acct. 323.

356. Principles of Insurance. Credit 5(5-0).

Study of the fundamentals of general insurance. Attention is given to life, property, casualty, liability and other forms of insurance as used by modern business. Prerequisite: B.A. 351.

357. Principles of Real Estate. Credit 5(5-0).

A survey course covering types of real estate, interests, deeds, leases, restrictions, real estate brokerage, selling, advertising, and management. Prerequisite: B.A. 351.

358. Business Internship. Credit 2(0-10).

Students are required to do 10 hours of practice work per week in the offices and plants of the College and in and around Greensboro for a quarter.

Courses in Business Education

336. Measurement in Business Education. Credit 3(3-0).

Study of instruments of measurement, construction and use for diagnostic, prognostic, remedial and achievement evaluation in Business Education. Prerequisite: Educ. 237.

350. Methods of Teaching Skill Subjects. Credit 5(5-0).

Analysis and evaluation of objectives, materials and methods of teaching typewriting, shorthand, transcription and related office skills. Provision is made for observation and participation in demonstration teaching. Prerequisite: Educ. 237, B.E. 336.

351. Methods of Teaching Bookkeeping and Basic Business Subjects. Credit 5(5-0).

Selection, organization, and evaluation of supplementary teaching materials and analysis of techniques in teaching bookkeeping, general business, business law, business structure, and elementary economics.

Construction of teaching units, enrichment materials and lesson plans for effective teaching on the secondary level. Prerequisites: Educ. 237, B.E. 336.

352. Directed Teaching in Business Education. Credit 5(5-0).

Off campus student teaching in accredited high schools of the State. Opportunities are provided for supervision of extra-curricular activities, keeping of student records, and participation in community activities and projects. Prerequisite: B.E. 350 or 351.

Courses in Secretarial Science

314. Shorthand. Credit 5(5-0).

Study of wordbuilding and the general principles outlined in the Gregg Shorthand manual (simplified) and speed studies. Prerequisite: Eng. 210.

315. Shorthand. Credit 5(5-0).

Continuation of 314 and with added emphasis on transcription of simple letters and documents. Prerequisite: 314.

316. Shorthand. Credit 5(5-0).

Principles are included early in this course and emphasis is placed on difficult dictation and transcription, speed tests and reporting speeches. Prerequisite: 315.

317. Typewriting. Credit 2(0-5).

A working knowledge of the use of all parts of the typewriter, a thorough command of the keyboard by means of the touch system, rhythmic drills, practice in writing words, etc. Minimum rate for course credit is 30 CWPM.

318. Typewriting. Credit 2(0-5).

Tests and drills for speed and accuracy in the transcription of easy material from printed matter. Prerequisite: 317. Minimum rate for course credit is 50 CWPM.

319. Typewriting. Credit 2(0-5).

Technical typewriting is emphasized through tabulation, stencil cutting, report making and other practical duties. Prerequisite: 318. Minimum rate for course credit is 60 CWPM.

320. Advanced Typewriting. Credit 2(0-3).

Improvement of speed, accuracy, and machine manipulation. Specialized instruction is given in advanced techniques, duplication processes, and forms common to office work. Prerequisite: Secretarial Science 319.

321. Advanced Stenography and Typewriting. Credit 5(5-0).

A review of techniques in typing and shorthand for the purpose of developing speed. Emphasis is placed on the advanced dictation take rates and transcription rates.

322. Transcription. Credit 3(3-0).

To develop the ability to transcribe accurately, to use machines and materials properly and to promote habits of performance that are desirable for satisfying the requirements of business. Prerequisite: S.S. 321.

323. Secretarial Studies. Credit 5(2-8).

Qualifications, duties, responsibilities and work of a secretary. Prerequisites: Sec. Sc. 319, 322, Eng. 213, or consent of instructor.

324. Office Appliances. Credit 2(0-4)

Knowledge and skill in the use of modern office equipment. Prerequisite: Sec. Sc. 325.

325. Production Typewriting. Credit 2(0-3).

Production of various kinds of typewritten matter that would be required in a business office.

326. Office Procedures. Credit 2(2-0).

Study and discussion of the various problems found in several types of business offices.

327. Business Internship. Credit 2(0-13).

Students are required to do 13 hours of practice work per week in the offices and plants of the College and in and around Greensboro for a quarter.

328. Specialized Secretarial Work. Credit 3(3-0).

Study of special duties, requirements, and procedures of secretaries in various types of offices. Prerequisite: Secretarial Science 322.

329. Filing. Credit 2(0-4).

Special emphasis on Remington Rand alphabetic filing, with some attention to subject, geographic, numeric, and Soundex systems.

DEPARTMENT OF ELECTRICAL ENGINEERING

ARMAND RICHARDSON, *Chairman*

DEPARTMENT OBJECTIVES

The courses offered in the Department of Electrical Engineering are designed to serve the following purposes:

1. To provide understanding of and comprehensive training in the important natural laws and concepts in the physical and engineering sciences.
2. To encourage the student to look for ways of correlating and integrating fundamental knowledge; to think clearly and logically; and to learn to apply his knowledge to new situations.
3. To develop skills in the proper methods of communication of ideas through use of language; to develop ability to portray ideas in drawings and sketches; and to develop facility in the use of mathematics.
4. To develop skills in the analysis and synthesis of electrical and electronic systems and to encourage originality and creative ability wherever possible.
5. To extend classroom work with laboratory experiences designed to:
 - (a) confirm theoretical concepts
 - (b) develop facility in the use of measuring instruments
 - (c) give the student the chance to observe actual engineering devices in action
 - (d) develop the ability to work effectively in a group as both a leader and a member of the group in accomplishing specific engineering objectives
 - (e) gain additional facility in the use of the language of engineering.
6. To encourage the student to appreciate life-long learning, with just one step in the process of continuous education.
7. To prepare the graduate engineer to be a respected citizen in his community and to have an appreciation for such values as those termed social, artistic, and economic, which will help him become a worthy member of the profession.

CURRICULUM

Freshman Year

(See First Year's Curricula of Engineering, Page 190.)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math. 321, 322, 323	5(5-0)	5(5-0)	5(5-0)
Physics 321, 322, 323	5(3-4)	5(3-4)	5(3-4)
E.E. 324, 325, 326	4(3-3)	4(3-3)	4(3-3)
Engineering Problems, M.E. 318, 319	1(0-2)	1(0-2)	.....
*Humanities and Elective	4()	4()	4()
	19	19	18

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
E.E. 331, 332, 333	3(3-0)	3(3-0)	3(3-0)
E.E. 334, 335	2(1-3)	2(1-3)	.....
E.E. 336 .....	.....	.....	3(3-0)
E.E. 337 .....	.....	4(3-3)	.....
M.E. 331, 332, 333	5(5-0)	5(5-0)	5(5-0)
Math. 331	5(5-0)	.....	.....
Econ. 231 .....	.....	.....	5(5-0)
M.E. 321 .....	.....	3(2-2)	.....
Electives (Air or Mil. Sc.)	3()	3()	3()
*Humanities	3( )	.....	.....
	21	20	19

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
E.E. 346, 347, 348	4(3-3)	4(3-3)	4(3-3)
E.E. 355, 356, 357	4(3-3)	4(3-3)	4(3-3)
E.E. 360, 361 .....	.....	3(3-0)	3(3-0)
Econ. 234	5(5-0)	.....	.....
Phy. 332, 333	3(3-0)	3(3-0)	.....
M.E. 336 .....	.....	.....	3(3-0)
M.E. 353 .....	.....	.....	1(0-3)
M.E. 337 .....	.....	.....	3(3-0)
*Electives (Air or Mil. Sc.)	3()	3()	3()
	19	17	21

*Humanities courses to be selected from the following fields:

Fine Arts
Philosophy and Religion
Music

Literature
History
Social Science

COURSES IN ELECTRICAL ENGINEERING

321, 322, 323. Basic Electrical Engineering. Credit 4(3-3) each.

Electrical engineering fundamentals and applications for non-electrical engineering students, a-c and d-c circuits and machinery; electron tubes and applications; electro-chemical processes; coordinated laboratory work. Prerequisites: Phy. 323, Math. 323.

324, 325, 326. Introduction to Electrical Engineering. Credit 4(3-3) each.

A first course for electrical engineering students; electric and magnetic concepts and units; motional electromagnetic forces; electric fields and forces; electrochemistry; introduction to electronics. Coordinated laboratory work. Corequisites: Phy. 321, Math. 321.

331, 332, 333. Electric Circuit Analysis. Credit 3(3-0) each.

Fundamentals of linear circuit analysis; sinusoidal steady state; coupled circuit theory; balanced and unbalanced polyphase circuits; harmonic analysis and fourier series; transients; the laplace transform. Prerequisites: Math. 323, E.E. 326, or consent of instructor.

334, 335. Electrical Measurements. Credit 2(1-3) each.

Instruments and techniques for measuring electrical and magnetic quantities; galvanometers, d-c bridges; potentiometers; a-c bridges; magnetic measurements; measurement of power. Prerequisite: E.E. 326 or Phy. 331.

336. Principles of Electromagnetic Fields. Credit 3(3-0).

The basic postulates of electromagnetism; the integral laws in free space; the differential laws in free space; static fields; time varying fields. Prerequisites: Math. 323, E.E. 332.

337. Basic Electronics. Credit 4(3-3).

Electron Ballistics; thermionic, high field, and photoemission as applied to vacuum tubes, semiconductors, gas-filled tubes, and specialized tubes; coordinated laboratory work. Prerequisites: E.E. 331, Math. 323.

346, 347, 348. Electronic Engineering. Credit 4(3-3).

Principles of electronic circuits; rectifiers and filters; amplifiers; feedback and oscillatory systems; modulation and demodulation; wave shaping circuits; receiving and transmitting systems: Techniques using semiconductors, vacuum tubes, and gas-filled tubes are employed throughout the courses. Coordinated laboratory work with industrial applications and special projects. Prerequisite: E.E. 337.

351. Power Transmission Lines. Credit 5(5-0).

Long distance transmission of power; determination of disturbed line parameters; general circuit constants and equations; circle diagrams as applied to long distance power lines. Prerequisites: E.E. 332, Math. 331.

354. Radio Circuits. Credit 4(1-6).

Special topics and laboratory work of special interest to the student; most of the work is given by the project method. Prerequisite: E.E. 346.

355, 356, 357. Electric Machinery. Credit 4(3-3) each.

Principles of electric energy converters; application of circuit theory to electric apparatus; characteristics of transformers, direct-current machines, induction and synchronous machines, and power rectifiers and inverters; thermoelectric generators. Coordinated laboratory work. Prerequisite: E.T. 333.

360, 361. Electromagnetic Wave Theory. Credit 3(3-0) each.

Fundamental electronic concepts at ultra-high frequencies; analysis of transmission lines and networks; Maxwell's equations and their applications; reflecting phenomena; wave guides and radiating systems. Prerequisite: E.E. 336.

DEPARTMENT OF INDUSTRIAL EDUCATION

CHARLES W. PINCKNEY, *Chairman*

The public schools of North Carolina, like the public schools of many states, are in constant need of securing qualified teachers of industrial education. To meet the needs, A. & T. College offers training for industrial arts teachers and trade teachers of vocational industrial subjects.

DEPARTMENT OBJECTIVES

The courses offered by the Department of Industrial Education are designed to serve the following purposes:

1. To prepare teachers of industrial arts and vocational industrial courses for public school service and to offer additional training to industrial teachers now in service.
2. To develop the students' skill and manipulative ability in industrial processes.
3. To develop correct habits, attitudes and ideals for health and safety.
4. To supply students with the necessary informational background for shop teaching.
5. To give experience in typical teaching activities and practice in teaching industrial courses.

6. To familiarize students with aims, problems and literature relating to industrial education.
7. To develop an appreciation of the significance of industrial education in our society.
8. To stimulate a scholarly and scientific attitude toward problems of teaching.

TEACHER TRAINING FOR INDUSTRIAL ARTS EDUCATION

The prospective teacher of industrial arts education receives training in the fundamental skills of several trades. The fields of concentration are electricity, mechanical drawing, radio, metalwork, and woodwork.

CURRICULUM FOR INDUSTRIAL ARTS EDUCATION

Freshman Year

(See First Year's Curricula of Engineering, Page 190.)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Woodwork, I.A. 321, 322, 323	5(1-8)	5(1-8)	5(1-8)
Industrial Arts Drawing, I.A. 331, 332, 333	3(0-6)	3(0-6)	3(0-6)
Electricity, I.A. 326, 327, 328	3(0-6)	3(0-6)	3(0-6)
General Metals, I.A. 334, 335, 336	4(2-4)	4(2-4)	4(2-4)
Physical Education Electives	1(0-2)	.....	1(0-2)
Voice & Speech Improvement, Eng. 224 ..	.....	.....	3(2-2)
Vocational Education, I. Ed. 331 .....	.....	3(3-0)	.....
‡Electives	2()	2()	2()
	18	20	21

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Woodturning, Upholstery, I.A. 338, 339	3(0-6)	3(0-6)	.....
Music Elective .....	.....	.....	2(2-0)
Adolescent Psychology, Psy. 202	3(2-2)	.....	.....
Educational Psychology, Psy. 203 .....	.....	3(3-0)	.....
*Technical Electives	3(0-6)	3(0-6)	3(0-6)
Physics 321, 322	5(3-4)	5(3-4)	.....
Principles of Sociology, Soc. 231 .....	.....	.....	5(5-0)
Tests and Measurements, Psy. 204 .....	.....	.....	3(3-0)
General Shop, I.A. 349 .....	.....	.....	3(0-6)
Vocational Guidance, I.Ed. 332	3(3-0)	.....	.....

‡Freshman and sophomore male students who are not veterans are required to enroll in military or air science each quarter of the freshman and sophomore years.

*Technical Electives—9 hours required in one area: Ceramics, metal, leather craft.

Shop Management, I.Ed. 347	3(3-0)	.....
†Electives	3()	4()
	20	20

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physical Education Electives	1(0-2)	1(0-2)	.....
Art 311, 312	3(0-6)	3(0-6)	.....
Economics 231, 234	5(5-0)	.....	5(5-0)
Personal and Community Hygiene, Health Ed. 234	5(5-0)	.....	.....
Principles of Secondary Ed., Ed. 237 .....	.....	3(3-0)	.....
Trade Analysis, I.Ed. 341	3(3-0)	.....	.....
Methods of Teaching Ind. Ed., I.Ed. 343 ..	.....	5(5-0)	.....
Observation and Student Teaching, I.Ed. 344 .....	.....	.....	5(5-0)
Teaching Problems in Ind. Ed., I.Ed. 502 ..	.....	3(3-0)	.....
†Electives	3()	3()	3()
	20	18	13

COURSES IN INDUSTRIAL ARTS

311. Introduction to Leather Craft. Credit 3(0-6).

Fundamentals of materials, tools and skills used in leather craft.

312. Designs and Assembling Leather Craft. Credit 3(0-6).

Continuation of I.A. 311—advanced projects constructed.

313. Carving and Stamping Leather Craft. Credit 3(0-6).

Continuation of I.A. 312—advanced carving and stamping.

321. General Woodwork. Credit 5(1-8).

Care and use of hand tools, principles of planning, squaring and laying out work. Special projects assigned to students in accordance with the student's skill.

322. General Woodwork. Credit 5(1-8).

Emphasis on the practical operation of power tools. Prerequisite: I.A. 321.

323. Advanced Woodwork. Credit 5(1-8).

Construction of projects from drawings or blueprints. Care of power machines, saw filing, band saw brazing, sharpening and setting planer knives. Prerequisite: I.A. 322.

†Junior and senior electives may be taken in Advanced Military or Air Science. Planning of electives will be made in consultation with the student's adviser.

326. Electric Wiring. Credit 3(0-6).

A study of the fundamental principles of two-and three-wire circuits for light and power. The study and use of electrical wiring materials and electrical codes.

327. General Electricity. Credit 3(0-6).

Instruction and laboratory practice covering fundamental principles of direct and of alternating current equipment. Study of meters, motors, generators, armature winding and alternating current circuits. Study of home appliances an integral part of the course.

328. Electricity (Radio). Credit 3(0-6).

Theory and fundamentals of radio communication circuits, and power supplies. Testing of standard circuits, radio repair and code practice. Prerequisites: I.A. 326, 327.

330. Repair and Maintenance of Home Furniture. Credit 3(0-6).

A course designed to help homemaking teachers meet specific problems in the improvement and care of home furniture. Instruction in simple upholstery techniques and other processes using tools and accessories for home repair. Finishing and refinishing wood. Students encouraged to make an effort to provide their own work projects.

331. Industrial Arts Drawing. Credit 3(0-6).

A course for acquisition of information and development of skills needed by a teacher in industrial arts drafting. Utilization and explanation of modern techniques for teaching drawing at various levels in high school or vocational school. Instruction in A.S.A. conventions, projections, revolutions, developments, lettering and pictorial representation with reference to machine and woodworking drawing. Prerequisite: M.E. 312.

332. Industrial Arts Drawing. Credit 3(0-6).

Problems in sheetmetal drawing, shading, technical sketching, production illustration and industrial arts design. Prerequisite: I.A. 331.

333. Industrial Arts Drawing. Credit 3(0-6).

Basic elements in the planning and construction of residential buildings. Problems in floor plans, elevations, details and perspective. Study of kitchen, living room, dining room, bath room and bed room layout. Prerequisite: I.A. 332.

334. General Metals. Credit 4(2-4).

A general introduction to machine shop methods. Operation of the lathe, milling machine, drill press, shaper and grinding of cutting tools. Heat treating of metals. Projects involving basic operations of each machine. Special emphasis is put on machine maintenance and machine shop calculations as well as related information.

335. General Metals. Credit 4(2-4).

Fundamental machine and hand tool operations; care, use, and adjustment of sheet metal equipment; the development of simple patterns. Projects involving art metal, metal spinning, soft and hard solder, raising, chasing, seaming, piercing, etching, coloring and other processes useful to teachers of metal shops. Study of related technical information; sources, cost and specifications of equipment and supplies.

336. General Metals. Credit 4(2-4).

General activities in metal work including ornamental iron, tool forging, elementary foundry, bench metal, oxyacetylene welding and cutting. Study of related technical information; shop organization, courses of study, layout, equipment, operation, uses of instructional materials and supplies.

338. Woodturning. Credit 3(0-6).

Thorough drill in the cutting action of turning tools and methods of holding them. Projects in spindle and in face plate turning are selected for practice. Finishing and polishing on the lathe.

338a. Woodturning. Credit 3(0-6).

Instruction in elaborate and more intricate types of turning than are given in I.A. 338. Projects involving spherical and spiral turning included.

339. Upholstery. Credit 3(0-6).

Instruction in caning and seat weaving method of upholstering a plain board surface, methods of fastening webbing, burlap and its uses, upholstery with springs, hard-edge upholstery, and spring edge upholstery.

339a. Upholstery. Credit 3(0-6).

A continuation of 339, including construction or rebuilding of an upholstered project.

340. Wood Finishing. Credit 3(0-6).

Mechanical preparation of wood before staining, preparation and use of stains and the application of different classes of commercial stains, kinds of fillers—their preparation and application, refinishing.

340a. Wood Finishing. Credit 3(0-6).

Refinishing, French polishing, and special work in finishing and polishing on the lathe.

348. Comprehensive Shop Projects. Credit 3(0-6).

General construction, repairs, maintenance work or advanced projects involving wood turning, carving, inlaying, upholstering and wood finishing.

349. General Shop. Credit 3(0-6).

Purpose and organization of general shops, instructional materials and procedures. Shop operating problems including personnel organization and equipment selection, project construction on a general shop basis.

COURSES IN INDUSTRIAL EDUCATION**324. Materials of Construction. Credit 3(3-0).**

A study of the manufacture and physical properties of iron, steel, timber, cement, concrete, and other materials encountered in technical fields, and the A.S.T.M., specifications and methods of testing. Prerequisite: Chem. 113.

325. Foundations of Industrial Education. Credit 3(3-0).

An orientation course for industrial education freshmen. Course requirements program operation, regulation. Familiarizes the student with the underlying philosophy, basic principles, and prevailing practices and terminology in Industrial Arts and Vocational Education.

331. Vocational Education. Credit 3(3-0).

Study of principles, practices, philosophy types and problems of federally aided vocational education programs. Special consideration given to agencies, their organization and responsibilities at the state and national levels.

332. Vocational Guidance. Credit 3(3-0).

The problems of vocational guidance, its beginning organization and administration in high schools. Special attention to guidance in the Junior and Senior high school as it relates to the work of Industrial Arts. Fall.

333. Shop Safety Education. Credit 3(3-0).

This course provides the necessary lesson units and methods of teaching school shop safety as well as plans for developing complete shop safety education programs.

341. Trade Analysis. Credit 3(3-0).

Methods of analyzing occupations for the purpose of securing teaching content and determining instructional order. Trade elements analyzed for instructional content. Methods of developing elements into courses and preparation of instruction sheets.

343. Methods of Teaching Industrial Education. Credit 5(5-0).

Methods of presenting related information, procedures in giving demonstrations with tools and machines, testing and grading shop work, organization of subject matter and lesson planning.

344. Observation and Student Teaching in Industrial Education. Credit 5(5-0).

Practical experience in conducting unit trade and industrial arts programs will be offered.

347. Materials, Equipment and Shop Management. Credit 3(3-0).

This discussion of problems of equipping and arranging trades and industrial art shops and the care of tools and materials, safety and management are discussed.

VOCATIONAL INDUSTRIAL EDUCATION*

This curriculum is designed for the preparation of shop and related subject teachers in secondary school programs in trades and industries.

The Vocational Industrial Education curriculum leads to the degree of Bachelor of Science in Vocational Industrial Education. Graduates holding this degree will have also met teacher certification requirements in Industrial Arts.

*To be certified by the State Department as a vocational shop and trade practice teacher, a person must present evidence of two years trade experience beyond the apprenticeship period in the trade he expects to teach.

Candidates desiring this degree must have at least two years successful trade experience in the trade they wish to teach. Students desiring degrees may enter with or without having the required practical experience. However, the student who has not had this experience when he enters must fulfill the requirement before graduation either by working parts of the school year, summers, or by completing the work experience after finishing required residence courses.

CURRICULUM FOR VOCATIONAL INDUSTRIAL EDUCATION

Freshman Year

(See First Year's Curricula of Engineering, Page 190.)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
‡Technical Electives	5()	5()	5()
Industrial Arts Drawing, I.A. 331, 332, 333	3(0-6)	3(0-6)	3(0-6)
Physical Education Electives	1(0-2)	1(0-2)	1(0-2)
Materials of Construction, I.Ed. 324	3(0-0)	.....	.....
Physics 321, 322	5(3-4)	5(3-4)	.....
Vocational Education, I.Ed. 331 .....	.....	3(3-0)	.....
Principles of Sociology, Soc. 231 .....	.....	.....	5(5-0)

NOTE: See ‡Page 222.

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Contracts and Specifications, M.E. 327 ...	.....	.....	3(3-0)
*Electives	2()	2()	2()
	19	19	20

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
‡Technical Electives	6()	5()	3()
Art 311, 312, 313	3(0-6)	3(0-6)	3(0-6)
Adolescent Psychology, Psy. 202	3(3-0)	.....	.....
Educational Psychology, Psy. 203 .....	.....	3(3-0)	.....
Tests and Measurements, Psy. 204 .....	.....	.....	3(3-0)
Vocational Guidance, I.Ed. 332	3(3-0)	.....	.....
Shop Safety Education, I.Ed. 333 .....	.....	.....	3(3-0)
Voice and Speech Improvement, Eng. 224 .	.....	3(3-0)	.....
Shop Management, I.Ed. 347 .....	.....	3(3-0)	.....
Physical Education Elective	1(0-2)	.....	.....
Health Education 234 .....	.....	.....	5(5-0)
†Electives	3()	3()	3()
	19	20	20

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
‡Technical Electives	3()	3( )	.....
Audio-Visual Laboratory, Ed. 225	3(2-2)	.....	.....
Principles of Secondary Education, Ed. 237	.....	3(3-0)	.....
Trade Analysis, I.Ed. 341	3(3-0)	.....	.....
Methods of Teaching Ind. Ed., I.Ed. 343 ..	.....	5(5-0)	.....
Observation and Student Teaching, I.Ed. 344 .....	.....	.....	5(5-0)
Diversified Occupations Programs, I.Ed. 520	3(3-0)	.....	.....
Teaching Problems in Ind. Education, I.Ed. 502 .....	.....	3(3-0)	.....
Organization of Related Study Material, I.Ed. 521 .....	.....	3(3-0)	.....
Economics 231, 234	5(5-0)	.....	5(5-0)
†Electives	3()	3()	3()
	20	20	13

*Freshman and sophomore male students who are not veterans are required to enroll in military or air science each quarter of the freshman and sophomore years.

‡Technical electives will be selected after consultation with adviser to meet state teacher certification requirements in industrial arts. Minimum of nine credit hours are required in each of the following areas: wood, metal, electricity, drawing and nine additional credits—additional credits may be selected in wood, leathercraft or ceramics.

†Junior and senior electives may be taken in Advanced Military or Air Science. Planning of electives will be made in consultation with the student's adviser.

GRADUATE PROGRAM IN INDUSTRIAL EDUCATION

Graduate work in industrial education aims to aid the promotion of industry by providing advanced technical training for teachers of industrial arts education or vocational industrial education. The department offers instruction for the following types of students: (1) those in the field who desire advanced training as teachers or supervisors of unit and general industrial arts shops in junior and senior high schools; and in schools of the smaller communities; (2) experienced tradesmen with the necessary teaching requirements who desire additional training in the development and conduct of programs of industrial education, especially those established under the Smith-Hughes Act; (3) teachers of related or cognate subjects; (4) others who desire further training in these fields.

ACADEMIC COURSES IN INDUSTRIAL EDUCATION

Ind. Ed. 506. Plastic Craft

Ind. Ed. 508. Handicrafts

Ind. Ed. 608. Advanced Furniture Design and Construction

Ind. Ed. 609. Electricity for Industrial Arts Teachers

Ind. Ed. 614. Advanced Drafting Techniques

Ind. Ed. 613. Comprehensive General Shop

Ind. Ed. 611. Problems in Industrial Arts

Ind. Ed. 612. Problems in Industrial Arts

COURSES IN INDUSTRIAL EDUCATION

Graduates and Advanced Undergraduates

502. Teaching Problems in Industrial Education. Credit 3(3-0).

A general methods course for industrial education students. Problems involve analysis of objectives, curriculum content, text and reference books, teaching aids and devices, remedial instructions, cumulative records, storage systems, organizing class, teaching plans, safety programs, storage systems information about students, demonstration. Prerequisites: Ed. 341, I.A. 347.

504. History and Philosophy of Industrial Education. Credit 3(3-0).

Chronological and philosophical development of industrial education with special emphasis on its growth and function in American schools.

506. Plastic Craft. Credit 3(2-2).

For teachers of industrial arts, arts and crafts and those interested in plastics as a hobby. Operations in plastics analyzed and demonstrated; design, color, kinds and uses of plastics, how plastics are made and sold; vocational information. Projects suitable for class use constructed.

507. Advanced Plastic Craft. Credit 3(2-2).

A continuation of 506, including blow forming and internal carving.

508. Handicrafts. Credit 3(2-2).

For teachers of Industrial Arts, arts and crafts and those interested in craft work as a hobby. Covers the materials, tools and processes used in, and craft activities carried on in elementary and junior high schools that do not have specialized shops. Also of value to grade teachers who feel the necessity for more information regarding the materials, tools, and processes frequently employed in an activity-type program.

509. Advanced Handicrafts. Credit 3(2-2).

A continuation of 508. Instruction in advanced handicraft techniques.

520. Diversified Occupations Programs. Credit 3(3-0).

A course designed to give the prospective teachers of vocational education a knowledge of the basic concepts and processes of co-operative work in general, with special attention to diversified occupations.

521. Organization of Related Study Material. Credit 3(3-0).

The principles of selecting and organizing both technical and general related instructional material for trade extension and diversified occupations classes.

604. Supervision and Administration of Industrial Education. Credit 3(3-0).

Relation of industrial education to the general curriculum and the administrative responsibilities entailed. Courses of study; relative costs; coordination problems; class and shop organization, and the development of an effective program of supervision. Selection of teachers and their improvement in-service. Of interest to school administrators, teachers of industrial arts, and vocational-industrial subjects.

605. Curriculum Laboratory in Industrial Education. Credit 3(3-0).

Review of basic principles of the preparation of instructional materials for classroom use. Students select and develop some significant area of instruction for use in a shop or related subject class. Courses of study that function in teaching situations are prepared. Opportunity afforded to analyze existing courses of study.

606. Research and Literature in Industrial Education. Credit 3(3-0).

Survey of printed reports; critical analysis; acquaintance with types of literature. Study of techniques of research and reporting of the results of research.

608. Advanced Furniture Design and Construction. Credit 3(2-2).

Laws, theories and principles of aesthetic and structural design, planning, designing, pictorial sketching and furniture drawing. Labora-

tory work involving setting up, operating, and maintaining furniture production equipment, plus forms, requisitions, orders, invoices, stock bills, buying and professional problems. Prerequisite: Permission of instructor.

609. Electricity for Industrial Arts Teachers. Credit 3(2-2).

For teachers and prospective teachers of Industrial Arts. Emphasis placed on the selection and construction of projects useful in school shops, development of related information, Theory and fundamentals of Electricity and radio communication, selecting equipment and supplies, course organization and instructional materials.

611. Problems in Industrial Arts. Credit 3(2-2).

A comprehensive course in general bookbinding. Instruction in planning and construction of projects such as binding new books, repairing and binding old books, binding magazines and binding photographs.

612. Problems in Industrial Arts. Credit 3(2-2).

A comprehensive course in silk screen printing. Instruction given in planning and construction of projects in silk screen printing activities.

613. Comprehensive General Shop. Credit 3(2-2).

An advanced course in general shop techniques. Practical work to meet individual needs in industrial laboratories. Problems involving experimentation in woodwork, electricity, bookbinding, metal work, leather and plastics. General Shop organization; current practices, equipment, instructional materials and procedures.

614. Advanced Drafting Techniques. Credit 3(2-2).

For teachers with undergraduate preparation or trade experience. School techniques, standards, conventions, devices, experimentation in advance of opportunities offered in regular courses. Use of literature and research expected.

623. Construction and Use of Instructional Aids. Credit 3(2-2).

The analysis of various instructional aids useful in shop teaching, planning, designing, and construction of various teaching aids. Facilities for laboratory work provided.

624. Laboratory Planning for Industrial Shops. Credit 3(3-0).

Study of the principles involved in the design, selection, location, installation, and care of equipment suitable for high school industrial arts laboratories or vocational industrial departments.

631. General Industrial Education Programs. Credit 3(3-0).

Development on local, state, and national levels of day industrial schools, evening industrial schools, part-time day and evening schools.

Their organization types, courses of study, scope of movement, study of special student groups, fees and charges, buildings and equipment.

632. Test in Industrial Subjects. Credit 3(3-0).

Study and application of principles of achievement test construction to shop and drawing subjects; evaluation of results.

DEPARTMENT OF MATHEMATICS

ANITA M. RIVERS, W. P. JONES, *Co-Chairmen*

Objectives of the Department of Mathematics are as follows:

1. To review and strengthen students in the basic fundamentals of mathematics in order that they may be adequately equipped for expressing or interpreting quantitative ideas in this and related areas.
2. To provide an opportunity for all students to increase their sense of utility of the subject matter by emphasizing the application of mathematical processes to problems involving personal and social living.
3. To equip those students whose interests and abilities lead to further study, research and/or technology with an adequate mathematical background.
4. To contribute to the teaching efficiency of prospective secondary school mathematics teachers by insuring mastery of essential subject matter materials, and the development of a reasonable degree of skill, accuracy and speed in dealing with these materials.

Graduation Requirements:

Candidates for the B.S. degree in mathematics and those for the B.S. in engineering mathematics must complete 220 hours of work approved by the Dean.

All freshmen are required to take a placement test in mathematics. Those failing this test must register for Math. 309. (Students deficient in high school algebra must remove this deficiency before taking the placement test.)

Mathematics majors and minors should have an average of "C" or better in their mathematics courses. A minor in mathematics will consist of at least 30 hours, including Math. 311, 312, 313, 321, 322, 323, and 319.

Recommended for electives: Math. 326, 501, 506.

Required Courses for Freshmen and Sophomores:

Math. 311, 312, 313, 321, 322, 323	30 hrs.
English 211, 212, 213	15 hrs.
Physics 321, 322, 323	15 hrs.
Chem. 111, 112, 113	15 hrs.
Language (French or German)	15 hrs.
M.E. 311, 312, 314 (Engineering Math. Only)	9 hrs.
Physical Education	6 hrs.
Music and Art Appreciation (Math. Majors Only)	9 hrs.
Electives	6 hrs.

OUTLINE OF COURSES FOR MAJORS IN MATHEMATICS

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math. 314, 316, 331	5(5-0)	5(5-0)	5(5-0)
Economics 231, 234 .....	.....	5(5-0)	5(5-0)
Education	6 hrs.	6 hrs.	6 hrs.
Electives	7 hrs.	3 hrs.	3 hrs.
	18 hrs.	19 hrs.	19 hrs.

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Health Ed. 234 .....	.....	.....	5(5-0)
History 210, 221 or 222 .....	.....	5(5-0)	5(5-0)
Education 246	5(5-0)	.....	.....
Education 251 .....	.....	5(5-0)	.....
Electives	8 hrs.	3 hrs.	5 hrs.
Math. 319, 317	3(3-0)	.....	3(3-0)
	16 hrs.	13 hrs.	18 hrs.

OUTLINE OF COURSES FOR MAJORS IN
ENGINEERING MATHEMATICS

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math. 506, 331, 316	5(5-0)	5(5-0)	5(5-0)
M.E. 331, 332, 333	5(5-0)	5(5-0)	5(5-0)
Physics 332, 333, 338	3(3-0)	3(3-0)	3(3-0)
Electives	5 hrs.	5 hrs.	3 hrs.
	18 hrs.	18 hrs.	18 hrs.

Men students who must satisfy the requirements of Mil. Sc. or Air Sc. should do so during the first two years.
Engineering Math. majors must take M.E. 311, 312, 314 during the freshman year. Students must take a minimum of 18 hours per quarter during freshman and sophomore years.

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math. 318, 324, 501	5(5-0)	3(3-0)	5(5-0)
Economics 231, 234	5(5-0)	5(5-0)	.....
Electives	8 hrs.	8 hrs.	10 hrs.
	18 hrs.	16 hrs.	15 hrs.

COURSES IN MATHEMATICS

309. Remedial Mathematics. Credit 3(3-2).

Review of fundamentals of basic mathematics and development of basic concepts. Required of entering students who do not pass the mathematics placement test.

311. College Algebra. Credit 5(5-0).

Review of elementary algebra. Also, study of quadratics, simultaneous quadratic equations, binomial theorem, progressions, determinants and permutation. Prerequisite: High School Algebra.

312. Plane Trigonometry. Credit 5(5-0).

A general course in plane trigonometry with emphasis placed on the analytical concepts of the subject.

313. Analytic Geometry. Credit 5(5-0).

A thorough study of cartesian co-ordinates, plane curves, loci, polar co-ordinates and conic sections. Prerequisite: Math. 312.

314. History of Mathematics. Credit 5(5-0).

A survey of the development of mathematics by chronological periods, with biographical references, illustrations of national and racial achievements, and discussions of the evolution of certain important topics of elementary mathematics. Prerequisite: Math. 322.

315. Mathematics of Business. Credit 5(5-0).

A basic course offered primarily for students of Business Administration. A study of elementary principles of mathematics as applied to investments, sinking funds, annuities, insurance, etc. A thorough study of interests—simple and compound. Prerequisite: Math. 312.

316. Theory of Equations. Credit 5(5-0).

Methods of solving cubics, quartics and other higher algebraic equations. Methods of approximating roots, systems of equations, elements of determinants. Prerequisite: Math. 321.

317. Solid Analytic Geometry. Credit 3(3-0).

A study of curves, lines and planes in space, quadric surfaces, and transformations. Prerequisite: Math. 313. (Offered in alternate years. Not offered in 1960.)

318. Elementary Mathematical Statistics. Credit 5(5-0).

A general course covering fundamentals of statistics, central tendencies, variabilities, graphic methods, frequency distributions, correlations, reliability of measures, theory and methods of sampling, and the descriptive and analytical measures of statistics. Prerequisite: Math. 311.

319. Higher Algebra. Credit 3(3-0).

Study of abstract mathematical systems including groups, rings, and fields, and an introduction to matrix theory. Prerequisite: consent of Department Chairman. (Offered in alternate years. Not offered in 1959.)

320. College Geometry. Credit 3(3-0).

Modern Euclidean geometry, including such topics as the nine-point circle, harmonic section, and inversion. Introduction to Non-Euclidean geometries. Prerequisite: High School Geometry.

321, 322, 323. Differential and Integral Calculus. Credit 5(5-0) each.

A unified course covering the fundamentals of differential and integral calculus with applications. Prerequisite: Math. 313.

324. Surveying. Credit 3(1-4).

The methods of using the compass, transit, tape and level in making plane surveys. Lectures and field work. Elementary stadia work. Prerequisite: Math. 312.

326. Mechanics (Same as M.E. 331). Credit 5(5-0).

Prerequisites: Math. 323, Phys. 321.

331. Differential Equations. Credit 5(5-0).

Solution of standard types of differential equations, with applications in electricity and mechanics. Prerequisite: Math. 323.

Advanced Undergraduates and Graduates**501. Vector Analysis. Credit 5(5-0).**

A study of the processes of vector analysis, with a treatment of the vector functions and operations as applied in theoretical work. Prerequisite: Math. 506.

502. Mathematics of Life Insurance. Credit 3(3-0).

Probability, mortality table, life insurance, annuities, endowments, computation of net premiums, evaluation of policies, construction and use of tables. Prerequisite: Math. 318.

503, 504. Integrated Mathematics. Credit 3(3-0) each.

A study of the logical development of the number system, including complex numbers, the theory of algebra, trigonometry, analytic geom-

etry, differentiation, integration and the regular solids, hyperbolic functions and the theory of construction with straight edge and compasses; a mathematical background for mathematics teachers in the senior high school, junior college and technical school; also shows how trigonometry, algebra, analytic geometry and elementary calculus can be integrated into a unified course. Prerequisite: Calculus 321.

505. Numerical Computation (Formerly 504). Credit 3(3-0).

Interpolation, numerical solution of equations, approximations, numerical integration, construction of tables.

506. Advanced Calculus. Credit 5(5-0).

Review of differentiation and integration, approximation of integrals, partial derivatives, line integrals, integral theorems, applications to geometry, physics and mechanics.

507. Mathematical Statistics. Credit 3(3-0).

Averages, moments, correlation, probability, the normal and Poisson's distribution, the Gram-Charlier series, the distribution of statistics, sampling of populations, the Lewis theory, Sheppard's corrections, maximum likelihood, and other selected topics.

508. College Geometry. Credit 3(3-0).

Designed for prospective teachers of mathematics and students interested in geometry. An extension of Euclidean Geometry to theorems not usually included in an elementary course. Special attention to methods of proof, a broadening of the base of knowledge of geometry by an introduction to modern ideas and methods. Special references to the history and development of certain geometrical concepts. Prerequisites: Solid geometry and Math. 312.

509. Mathematics for Chemists. Credit 5(5-0).

This course will review those principles of mathematics which are involved in chemical computations and derivations from general through physical chemistry. It will include a study of significant figures, methods of expressing large and small numbers, algebraic operations, trigonometric functions, and an introduction to calculus.

601. Theory of Equations. Credit 5(5-0).

Complex numbers, solutions of cubics and bi-quadratics, methods of approximating roots, systems of equations, elements of determinants. Prerequisite: Math. 331 or Math. 316.

DEPARTMENT OF MECHANICAL ENGINEERING

PAUL JEWELL, *Chairman*

DEPARTMENT OBJECTIVES

The Department of Mechanical Engineering directs its activities toward the attainment of the following objectives:

1. To provide a broad program of studies which will prepare the student for gainful admission to employment in the field of mechanical engineering.
2. To provide the student with appreciations, understandings and fundamental information in the engineering sciences and of their relationships in industrial applications.
3. To provide the student with background and professional knowledge for the application of basic sciences in engineering.
4. To broaden the perspective of the student to know his responsibility to society and the engineering profession.
5. To challenge the student to increasing levels of competence in disciplines related to his chosen field.

The means of attaining these objectives are:

Lectures and class instruction supplemented by laboratory investigations designed to emphasize the engineering and economic principles involved, extensive use of visual aids and laboratory experiments employed to help the student get a clear understanding of many of the problems encountered in this area.

Specific areas of instruction include machine design, engineering analysis, heating, ventilating, and refrigeration, thermodynamics, physical metallurgy, manufacturing problems, and power plants.

CURRICULUM

Freshman Year

(See First Year's Curricula of Engineering, Page 190.)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 321, 322, 323	5(3-4)	5(3-4)	5(3-4)
Mathematics 321, 322, 323	5(5-0)	5(5-0)	5(5-0)
Engineering Problems M.E. 318, 319	1(0-2)	1(0-2)	.....
Kinematics, M.E. 321 .....	.....	3(2-2)	.....
Economics 231	5(5-0)	.....	.....

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Surveying, Math. 324 .....	.....	.....	3(1-4)
**Electives	3(3-0)	5(5-0)	6(6-0)
	19	19	19

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Electrical Engineering 321, 322, 323	4(3-3)	4(3-3)	4(3-3)
Mechanics, M.E. 331, 332, 333	5(5-0)	5(5-0)	5(5-0)
Heat Power Engineering, M.E. 336 .....	.....	.....	3(3-0)
Heating and Air Conditioning, M.E. 334, 335	3(3-0)	3(3-0)	.....
Thermodynamics, M.E. 325, 326	3(3-0)	3(3-0)	.....
Mech. Engineering Laboratory I, II, III, M.E. 351, 352, 353	1(0-3)	1(0-3)	1(0-3)
Math. 331 .....	.....	.....	5(5-0)
*Electives	3()	3()	3()
	19	19	21

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Machine Design, M.E. 341, 342, 343	5(5-0)	5(3-4)	5(3-4)
Heat Power Engineering, M.E. 344, 345 ...	3(3-0)	3(3-0)	.....
Fluid Mechanics, M.E. 337 .....	.....	.....	3(3-0)
Engineering Processes, M.E. 348	3(3-0)	.....	.....
Contracts and Specifications, M.E. 327 ....	.....	.....	3(3-0)
Internal Combustion Engines, M.E. 338 ...	.....	5(5-0)	.....
Mechanical Engineering Laboratory IV, V, VI, M.E. 354, 355, 356	1(0-3)	1(0-3)	1(0-3)
Testing Materials, M.E. 346	2(0-4)	.....	.....
Metallurgy, M.E. 339	3(2-2)	.....	.....
Economics 234 .....	.....	.....	5(5-0)
*Electives	3()	3()	3()
	20 hrs.	17 hrs.	20 hrs.

NOTE: Electives for sophomores, juniors, and seniors shall be programmed after consultation with the adviser of the student. Some junior and senior electives may be taken in advanced military or air science.

**Freshman and sophomore male students who are not veterans are required to enroll in military or air science each quarter of the freshman and sophomore years.

*Electives to be selected from courses in the humanities.

DESCRIPTION OF COURSES

311. Engineering Drawing. Credit 3(0-6).

Instrument practice; lettering; geometrical construction; projections; sections; auxiliary projections; revolution; pictorial drawing; intersection and development.

312. Engineering Drawing. Credit 3(0-6).

Drawing of fasteners, springs and gears; detail and assembly drawings; tracing and reproduction methods. Prerequisite: M.E. 311.

314. Descriptive Geometry. Credit 3(0-6).

Representation of common geometrical magnitudes with points, lines, planes, and solids; concurrent noncoplanar forces; the solution of problems; advanced intersection and development.

318, 319. Engineering Problems. Credit 1(0-2) each.

Introduction to the fields of engineering; analysis and solution of selected elementary engineering problems; systematic procedure and accuracy in making and checking computations; use of slide-rule and tables. Prerequisite: Math. 312.

321. Kinematics. Credit 3(2-2).

A condensed course covering relative motions, velocities and accelerations of machine parts including linkages, cams and gears. Prerequisites: M.E. 312, Math. 313, Physics 321.

325. Thermodynamics I. Credit 3(3-0).

A course in engineering thermodynamics including the fundamental principles of Energy Conversions, Thermometry, Specific Heats, The First and Second Laws of Thermodynamics, The Carnot Cycle, Fundamental Processes with Gases, Ideal Gases, Real Gases; Table and Nomographs. Prerequisites: Physics 322, Math. 323.

326. Thermodynamics II. Credit 3(3-0).

A continuation of Thermodynamics I, including the Second and Third Laws of Thermodynamics and their applications to fundamental processes. Differential Equations, Nomographs, Cyclic Processes, Equated Energy Transforms, some equipment, flow charts, and Introduction to Heat Transfer. Prerequisite: Thermodynamics I.

327. Contracts and Specifications. Credit 3(3-0).

Elementary principles of contracts involving bids and bidders; methods of payment for contracts and extra work; preparation and writing of specifications. Prerequisite: Eng. 213.

328. Machine Tool Laboratory. Credit 2(0-4).

A study of the construction, care and operation of various machine tools; use of special tools and measuring instruments; construction of projects. Prerequisite: M.E. 311.

331. Mechanics. Credit 5(5-0).

Statics, analytical and graphic treatment of systems of forces, couples, stresses in frames and trusses; distributed forces, centroids, moments of inertia. Prerequisites: Physics 321, Math. 323.

322. Mechanics. Credit 5(5-0).

Continuation of 331. Dynamics and kinetics, rectilinear and curvilinear motion, relative velocity and acceleration, work and energy, impact, moment of momentum. Prerequisite: M.E. 331.

333. Strength of Materials. Credit 5(5-0).

Shear and bending moment diagrams, stresses in beams, shafts, and columns; combined stresses, deflection in beams, fiber stresses and their distribution; tension, compression shear and torsion. Prerequisite: M.E. 331.

334, 335. Heating and Air Conditioning. Credit 3(3-0) each.

Principles of heating and air conditioning and their applications to the design of heating and air conditioning systems; study of principal equipment; design, layout and controls employed in various types of systems. Prerequisite: Physics 322.

336. Heat Power Engineering. Credit 3(3-0).

A descriptive and analytic study of the application and utilization of heat in the steam boiler, steam engine, steam turbine and power plant auxiliaries; fuels and combustion. Prerequisite: M.E. 326.

337. Fluid Mechanics. Credit 3(3-0).

Principles of static and dynamic behavior of fluids with some applications to hydraulic machinery and structures. Prerequisite: M.E. 326.

338. Internal Combustion Engines. Credit 5(5-0).

A study of the Otto and Diesel types of engines and their auxiliaries; fuel performance; design, applications and economics. Discussions, problems. Prerequisite: M.E. 325.

339. Metallurgy. Credit 3(2-2).

The production, constitution, and properties of ferrous and non-ferrous engineering metals and alloys; effects of mechanical working and heat treatment; corrosion and its prevention. Prerequisites: Chem. 112.

341. Machine Design. Credit 5(5-0).

Review of the properties of materials commonly used in machine construction; elementary stress analysis; combined stresses; working stresses. Prerequisites: M.E. 321, 332, 333.

342, 343. Machine Design. Credit 5(3-4) each.

Application of fundamental stress analysis to the design of machine elements to withstand varying forces and to operate without excessive wear at friction areas. Prerequisite: M.E. 341.

344, 345. Heat Power Engineering. Credit 3(3-0) each.

A study of power-plant processes including heat transfer; the sources of energy; the economic use of various fuels; heat balance; prime movers; steam boilers and auxiliaries as applied to power generation. Prerequisite: M.E. 336.

346. Testing Materials. Credit 2(0-4).

A fundamental laboratory course including standard test procedures for tension, compression, shear, torsion, hardness, and impact. Studies on iron, steel, other alloys, wood, brick, sand, gravel, cement, and concrete. Prerequisite: M.E. 333.

347. Fluid Mechanics. Credit 3(3-0).

A study of Fluid Flow, Fluid Highways, Controls, Principles of construction, Operation and Design of Fundamental Hydraulic Equipment. Demonstrations, lectures, problem solving. Prerequisites: M.E. 332, 326, 327.

348. Engineering Materials and Processes. Credit 3(3-0).

Study of production methods and materials in engineering including castings, forging, machine processes and finishing. The course will include lectures, visits to local plants and shops, audio visual aids, and standard reference data. Prerequisite: M.E. 333. Co-requisite: M.E. 346.

351, 352, 353. Mechanical Engineering Laboratory I, II, III. Credit 1(0-3) each.

Calibrating pressure, speed, temperature and power measuring instruments; the testing of fuels, lubricants, pumps, compressors, heating, ventilating, and refrigerating equipment. Prerequisites: M.E. 319, Physics 323. Co-requisites: M.E. 325, 326, 336.

354, 355, 356. Mechanical Engineering Laboratory IV, V, VI. Credit 1(0-3) each.

Advanced study and tests in the areas of power plants, heating and air conditioning, metallurgy, fluid flow, compressed air, fuels and combustion, lubricants, steam engines, turbines and internal combustion engines. Prerequisite: M.E. 353. Co-requisites: M.E. 344, 345.

DEPARTMENT OF PHYSICS

DONALD A. EDWARDS, *Chairman*

The purposes of the courses offered by the Department of Physics are:

1. To train students desiring to meet the urgent need for physicists in industrial or civil service research laboratories, and to provide them with courses required for graduate study.
2. To train teachers of physics for the secondary schools.
3. To provide the fundamental and advanced courses required by majors in other areas.
4. To provide non-science students with experiences which will give a greater appreciation of the present and future importance of physics in an age of machines and atomic energy.

The major in Engineering Physics will supplement the minimum of courses outlined below by selecting electives from other courses in the School of Engineering, as directed by the Department of Physics. The requirement of 20 hours of German may be reduced by High School entrance credit in German.

Students desiring to teach physics will seek a major in Physics, and they should consult with this department before registration for the Freshman year; they should begin the study of physics with Physics 321 in the Sophomore Year.

The non-science major should elect Physics 311, 312.

OUTLINE OF COURSES FOR MAJORS IN
ENGINEERING PHYSICS

(Freshmen will follow outline of School of Engineering on Page .)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mathematics 321, 322, 323	5(5-0)	5(5-0)	5(5-0)
Physics 321, 322, 323	5(3-4)	4(3-4)	4(3-4)
German 211, 212, 313	5(5-0)	5(5-0)	5(5-0)
*Electives	2()	2()	2()
Soc. Sci. or English 217 .....	.....	3( )	.....
	<hr/> 17	<hr/> 20	<hr/> 17

*Freshman and sophomore male students who are not veterans are required to enroll in military or air science each quarter of the freshman and sophomore years.

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mathematics 506, 501, 331	5(5-0)	5(5-0)	5(5-0)
Physics 330, 331, 338	3(3-0)	3(3-0)	3(3-0)
Physics 339 .....	.....	.....	2(0-4)
German 214, Ec. 231, 232	5(5-0)	5(5-0)	5(5-0)
Sec. Science Electives or Eng. 224	3()	3()	3()
Engineering Elec. or Mil./Air Sc.	3()	3()	3()
	<hr/> 19	<hr/> 19	<hr/> 18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 328, 501, 503	5(3-4)	5(5-0)	3(3-0)
Physics 332, 342, 504	3(3-0)	3(0-6)	5(5-0)
Physics 340, 341	5(5-0)	5(3-4)	.....
Physics 334	2(1-3)	.....	.....
Social Science .....	.....	.....	5(5-0)
Engineering Elec. or Mil./Air Sc.	3()	3()	3()
Engineering Electives .....	.....	.....	3()
	<hr/> 18	<hr/> 16	<hr/> 19

OUTLINE OF COURSES FOR MAJORS IN PHYSICS

(Freshmen will follow outline of School of Engineering on Page .
except that Art 314, 315, 316 will replace M.E. 311, 312, 314.)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 321, 322, 323	5(3-4)	5(3-4)	5(3-4)
Mathematics 321, 322, 323	5(5-0)	5(5-0)	5(5-0)
English 217, 224	3(1-4)	3(2-2)	.....
Botany 111, Education 222 .....	.....	5(5-0)	3(3-0)
Social Science, Psychology 202	3( )	.....	3(3-0)
Phys. Ed. or Health Ed.	1( )	.....	1()
Military or Air Science	2(2-2)	2(2-2)	2(2-2)
	<hr/> 19	<hr/> 20	<hr/> 19

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 330, 331, 338	3(3-0)	3(3-0)	3(3-0)
Mathematics 331 .....	.....	.....	5(5-0)
Physics 339 .....	.....	.....	2(0-4)

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physical Education	1(0-2)	1(0-2)	1(0-2)
Education 224, Psychology 203, 204	3(3-0)	3(3-0)	3(2-2)
Zoology 111, 112	5(3-4)	5(3-4)	.....
Music 215, 216	2(1-2)	2(1-2)	.....
Electives or Mil./Air Sci.	3()	3()	3()
	<hr/> 17	<hr/> 17	<hr/> 17

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 328, 342	5(3-4)	3(0-6)	.....
Physics 340, 341	5(5-0)	5(3-4)	.....
H.E. 234 .....	.....	5(5-0)	.....
Education 237, 251	3(3-0)	.....	5(2-6)
Education 249 .....	.....	.....	5(5-0)
Electives or Mil./Air Sci.	6()	6()	3()
	<hr/> 19	<hr/> 19	<hr/> 13

A minor in physics includes physics 321, 322, 323, 330, 331, 338, 339, a total of 26 hours.

COURSES IN PHYSICS

311, 312. Principles of Physics, I, II. Credit 5(4-2) each.

A two-quarter terminal course, including mechanics, properties of matter, heat, electricity and magnetism, wave motion, sound, light, and selected topics in Modern Physics. Prerequisite: Math. 311, or concurrent election.

321, 322, 323. General Physics, I, II, III. Credit 5(3-4) each.

A study of the fundamental principles of mechanics, properties of matter, heat and thermometry, magnetism, direct and alternating current electricity, wave motion, sound, light, and atomic physics. For science and technical majors. Prerequisite: Math. 313.

328. Heat and Temperature Measurement. Credit 5(3-4)

A study of methods of heat transfer, thermocouples, resistance, thermometry, calorimetry, and specific heats, with appropriate experiments. Prerequisites: Physics 323, Math. 323.

330. Mechanics. Credit 3(3-0).

An intermediate course with special emphasis upon rotation, harmonic motion, gravitation, hydrodynamics, and viscosity. Prerequisites: Phys. 322 and Math. 322.

331. Electricity and Magnetism. Credit 3(3-0).

An intermediate course including electric fields and potential, D.C. circuits, chemical and thermal emf's dielectrics, meters, magnetic properties of matter, alternating current, electromagnetic waves, and electronics. Prerequisites: Physics 323, Math. 323.

332. Thermodynamics I. Credit 3(3-0).

A course in engineering thermodynamics including the fundamental principles of Energy Conversions, Thermometry, Specific Heats, and First and Second Laws of Thermodynamics, the Carnot Cycle, Fundamental Processes with Gases, Ideal Gases, Real Gases, Table and Nomographs. Prerequisites: Physics 322, Math. 323.

333. Thermodynamics II. Credit 3(3-0).

A continuation of Thermodynamics I, including the Second and Third Laws of Thermodynamics and their applications to fundamental processes. Differential Equations, Nomographs, Cycle Processes, Equated Energy Transforms, some equipment, flow charts and Introduction to Heat Transfers. Prerequisite: Thermodynamics I.

334. Electrical Measurements. Credit 2(1-3).

Same as E.E. 334. Prerequisite: Physics 331, or concurrent election.

335. Electrical Measurements. Credit 2(1-3).

Same as E.E. 335. Prerequisite: Physics 334.

337. Vibration and Sound. Credit 5(5-0).

Production, propagation, transmission and reception of sound. Applications to acoustics, mechanics, and electrical problems. Prerequisites: Physics 323, Math. 331.

338. Light. Credit 3(3-0).

Propagation, reflection, refraction of light, lenses and optical instruments, interference, diffraction, polarization, line spectra, thermal radiation, photometry, and color. Prerequisites: Physics 323, Math. 323.

339. Experimental Light. Credit 2(0-4).

Prerequisite: Physics 338, or concurrent election.

340. Introduction to Modern Physics. Credit 5(5-0).

An introductory course involving electromagnetic theory of radiation, kinetic theory of gases, specific heats, the electron, electronics, X-rays, spectra, radioactivity, nuclear physics, and cosmic rays. Prerequisites: Physics 323, Math. 323.

341. X-Ray Diffraction Analysis. Credit 5(3-4).

An introductory course with emphasis upon the powder method, including X-ray sources, crystal shapes, and determinations of unit cell parameters and atomic positions. Prerequisite: Physics 340 or special permission.

342. Experimental Electron and Nuclear Physics. Credit 3(0-6).

Measurement of charge on electron, e/m , ionization potential, spontaneous nuclear disintegrations, and decay curves, Geiger counters. Prerequisite: Physics 340, or concurrent election.

GRADUATES AND ADVANCED UNDERGRADUATES**501. Physical Mechanics. Credit 5(5-0).**

Includes topics in motions of systems of particles, energy relations in a forces field, wave motion, and mechanics of a fluid. Vector analysis is used. Prerequisites: Physics 330 and Math. 501.

503. Electromagnetism. Credit 3(3-0).

Includes electrostatic fields and potentials, dielectrics, magnetic properties of materials, and Maxwell's theory. Prerequisites: Phys. 331 and Math. 501.

504. Particles of Modern Physics. Credit 5(5-0).

An advanced study of cathode rays, positive rays, photons, X-rays, positrons, neutrons, and cosmic rays. Prerequisite: Physics 340.

510. Advanced General Physics. Credit 3(3-0).

A course for science teachers which includes one week lectures and laboratory demonstrations devoted to each of the fundamental areas of physics, with emphasis upon the fundamental principles. Participants will observe and develop classroom demonstrations illustrating the basic principles with common inexpensive apparatus. No credit toward a degree in physics.

SCHOOL OF NURSING

THE SCHOOL OF NURSING

NAOMI W. WYNN, *Dean*

The School of Nursing was established by the Legislature in 1953 and offers a four-year basic program consisting of two academic and two calendar years and leading to a Bachelor of Science degree in Nursing.

The program is designed to prepare the student for nursing based on sound principles of general education as well as nursing education with integration of these aspects planned for in the curriculum. A nursing program within the college organization provides not only for the acquiring of scientific knowledge and technical skills, but also for development in social responsibilities and general cultural attributes.

The program is planned to prepare the student for assuming expanding responsibilities in nursing in inter-professional teams, and in community living. To achieve this goal, experiences will be provided to assist the student in developing technical skills, ability in communications and cooperative group endeavors, and in understanding physical, psychological and social aspects of health and disease and their application in the solution of health problems.

The School of Nursing is organized and administered on the same basis as other schools in the College. The College assumes full responsibility for theoretical and clinical aspects of the program in nursing and it provides for the students in nursing to share with other students all the facilities and resources of the College.

We believe that the education of the nurse should be based on scientific principles.

We believe that emphasis in nursing education should be placed on the development of the student as a person, a worker, and as a citizen.

We believe that the curriculum should be planned and carried out to provide learning experiences for the student in all major areas of nursing so that she will be able to function effectively in first level positions.

We believe that the educational institution granting the degree in nursing should be responsible for maintaining qualified faculty and have control of the educational program.

We believe that nursing is a progressive science which must make changes to meet the health needs of our society and that it is our responsibility to help the student to make adjustments to new situations.

We believe that good nursing care includes the prevention of disease, meeting the total needs of the patient and educating the patient and his family to care for himself after discharge.

OBJECTIVES OF THE SCHOOL OF NURSING

1. To assist the student in developing the knowledge and skills essential to function effectively in staff level positions in hospitals, in other institutions and in the home.
2. To assist the student in developing an understanding of and ability to impart to others, the importance of health conservation and prevention of disease.
3. To assist the student in developing an awareness of the responsibility of the community for the welfare of its citizens, to stimulate the student to gain an appreciation of the role of the public health nurse and to be able to function effectively in beginning positions in public health nursing.
4. To assist the student in understanding self in order that she might develop a wholesome attitude in maintaining maximum personal relationship. To assist the student in understanding the functions of a team leader in planning to meet the needs of each patient as an individual.
5. To stimulate the student to acquire the ability to recognize the continuous changing process in nursing and the importance of future study in order to function effectively in the area in which she shows aptitude and interest.
6. To encourage continuous development of character and personality of each individual according to his needs and to provide opportunities for participation in local, State and national organizations.
7. To assist the student in developing an appreciation for the nursing profession and an understanding of present problems and opportunities in nursing.

ADMISSION TO THE SCHOOL OF NURSING

A. *Educational Requirements*

Candidates for the School of Nursing must:

1. Meet the general entrance requirements of the College.
2. Be graduated from an accredited high school.
3. Present a satisfactory record of achievement in their high school work.
4. Achieve satisfactory performance on the Pre-nursing and Guidance Test Battery.

B. Personal Qualifications

1. Age—it is desirable that applicants be between 17-30 years of age. All applications, however, will be considered on an individual basis.
2. Marital status—qualified married applicants will be considered. Married applicants should be aware that no special concessions in arrangements of time and responsibility will be made.
3. Health—applicants must present evidence of good physical and mental health (Medical and dental examinations are required).

VACATIONS*

Freshman year.....	Same as College Calendar
Sophomore year.....	Four weeks during the summer
Junior year	Four weeks during the summer
Senior year.....	Graduation in May

PROCEDURE FOR ADMISSION

1. Apply to: Dean, School of Nursing
The Agricultural and Technical College
Greensboro, North Carolina
2. The following forms will be sent to the applicant:
 - a. Application for Admission
 - b. Pre-entrance Medical Record
 - c. Pre-entrance Dental Record
 - d. Estimate of Behavior Traits
 - e. Secondary School Record (to be completed by the high school principal). These forms must all be completed and returned to the School of Nursing as early as possible in the year the student expects to enter.
3. Upon receipt of all the above forms by the School of Nursing, an application card and specific information for taking the Pre-Nursing Test will be sent to the applicant.
4. A personal interview is desirable. Applicants who live in Greensboro or vicinity will be interviewed.
5. The School of Nursing will review and evaluate all of the above information and will select those students who seem to possess the necessary qualifications for pursuing the professional nurse program.

*Summer vacations in the Nursing School do not always coincide with normal vacation period since the students are always required to attend Summer School two sessions.

DATE OF ADMISSION

Students are admitted to the School of Nursing in the fall quarter of each year.

Transfer students may be considered for admission in the winter quarter.

THE PROGRAM IN NURSING

Approximately equal parts of general and professional education comprise the program. The sequence of the courses is so planned that the major amount of general education is given in the first four quarters. The program in professional education gradually increases with each successive quarter.

Clinical experience begins with nursing fundamentals at the beginning of the sophomore year. Supervised practice in hospitals, public health agency in the community, tuberculosis nursing, and psychiatric nursing is provided during the remainder of the four years.

SUMMARY OF REQUIREMENTS FOR BACHELOR OF SCIENCE IN NURSING

First Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 211, 212, 213	5	5	5
Chemistry 107, 108, 109	5	5	5
Orientation to Nursing N110N, N120N	2	3	....
Zoology 111	5	....	....
Anatomy 131 .....	....	5	....
Physiology 141 .....	....	....	5
Sociology 231 .....	....	....	5
Elective	1	1	....
	<hr/> 18	<hr/> 19	<hr/> 20

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>	<i>Summer</i>
English 224	3	....	....	....
Psychology 200 .....	....	....	5	....
Microbiology 112	5	....	....	....
Medical Nursing N22M (T), N23M (T) ....	....	5	5	....
Surgical Nursing N22S (T), N23M (T) ....	....	5	5	....

Nursing Fundamentals I, II, and III,

N21NF, N22NF, and N23NF	6	2	1	....
Drugs and Solutions N21DS	2	....	....	....
Pharmacology N22Ph., N23Ph. ....	....	2	2	....
Nutrition 123, 129	5	5	....	....
Clinical Nursing .....	....	2	2	2-4
Tuberculosis Nursing N24Tb. ....	....	....	....	8
	—	—	—	—
	21	21	20	10/12

Third Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>	<i>Summer</i>
Child Development 133	5	....	....	....
Child Psychology 201	3	....	....	....
Sociology 233 .....	....	3	....	....
Philosophy 222 .....	....	3	....	....
Mental Hygiene 205 .....	....	....	5	....
Public Health Nursing N33PH .....	....	....	4	....
Psychiatric Nursing N34	16

CLINICAL NURSING:

Operating Room Nursing

N31OR; N32OR; N33OR	7
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or

Obstetric Nursing N31Obs.;

N32Obs.; N33Obs.	11
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or

Pediatric Nursing N31Ped.;

N32Ped.; N33Ped.	11
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15	17	20	16	

Fourth Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>	<i>Summer</i>
Introduction to Social Work 244	3
Principles of Public Health N41PH; N42PH	4	4	....	....
Public Health Field Experience	5	5	....	....
Senior Conference N43SC .....	....	....	6	....
Nursing Trends N43NT .....	....	....	3	....
Clinical Nursing	6	6	6	....
	—	—	—	—
	18	15	15	....

DESCRIPTION OF COURSES

N11ON. Orientation to Nursing I. Credit 2(2-0).

N12ON. Orientation to Nursing II. Credit 3(3-0).

Introduction to the personal, social and professional requirements in nursing. Study of historical aspects of nursing with major emphasis on nursing developments since the time of Florence Nightingale.

N21DS. Drugs and Solutions. Credit 2(1-2).

A review of fundamental principles of arithmetic, study of measurements of dosages, methods of administering drugs, and the use and preparations of solutions in the care of patients.

N21NF. 6(3-4-4); N22NF. 2(1-2); N23NF. 1(0-2). Nursing Fundamentals.

Foundation course designed to assist the student in acquiring and developing beginning knowledge, skills and appreciations essential to basic professional care of the patient. The course extends over three quarters and is correlated with medical and surgical nursing.

N22M; N23M. Medical Nursing. Credit 5(5-0) each.

Study of the causes, pathology, prevention and treatment of medical conditions and the related emotional, social and rehabilitative aspects essential in understanding how to meet the nursing needs of individual patients. Course extends over two quarters correlated with surgical nursing, pharmacology and nursing fundamentals.

Instruction and supervised practice in medical nursing in the clinical area. Twenty-four weeks experience.

N22S; N23S. Surgical Nursing. Credit 5(5-0) each.

Study of surgical conditions with emphasis on the social and economic, psychological, teaching and rehabilitative aspects of the individual patient. Course extends over two quarters. Correlated with medical nursing, nursing fundamentals and pharmacology.

Instruction and supervised practice in surgical nursing in the clinical area. Twenty-four weeks experience.

N22Ph.; N23Ph. Pharmacology. Credit 2(1-2) each.

Study of drugs; the dosage, administration, action, absorption, excretion and usage in the treatment of pathological conditions. Correlated with medical and surgical nursing.

N24Tb. Tuberculosis Nursing And Long-Term Illness. Credit 8(5-0-15).

A six weeks experience including principles and practice of tuberculosis nursing with emphasis on the treatment and rehabilitation of the individual patient with long-term illnesses.

N31OR; N32OR; N33OR. (T and C). Operating Room Nursing. Credit 7(3-0-20) each.

Course designed to develop an understanding of the principles of aseptic techniques and their application in preoperative and postoperative nursing care in classroom and clinical area. Twelve weeks experience.

N31Obs.; N32Obs.; N33Obs. (T and C). Obstetric Nursing. Credit 11(6-0-15) each.

Study of the physiological conditions of the ante-natal, natal and post-natal phases of pregnancy, complications, principles of nursing care of mothers and the newborn infant.

Instruction and supervised practice in obstetric nursing in the clinical area. Twelve weeks experience.

N31Ped.; N32Ped.; N33Ped. Pediatric Nursing (T and C). Credit 11(6-0-15) each.

Study of the child in health and disease from the preventative and curative aspects, including the communicable diseases of childhood.

Instruction and supervised practice in pediatric nursing in the clinical area. Twelve weeks experience.

N33PHN. Public Health Nursing. Credit 4(4-0).

Study of the basic principles and practice of public health nursing and the responsibilities of the nurse as a member of the public health team.

N34Psy. Psychiatric Nursing. Credit 16(10-30).

Study of the dynamics of human behavior with emphasis on pathological manifestations and rehabilitative measures in classroom and clinical area for a twelve week period.

N41PHN; N42PHN. Public Health Field Experience. Credit 5(5-0) each.

Field experience of eight weeks instruction and supervised practice in applying principles of public health nursing to family health services through home and field visits, clinic services, school health programs, and other community agencies.

N42PH. Principles of Public Health. Credit 4(4-0).

Study of present day concepts of public health, graphical presentation of vital statistics, environmental sanitation, epidemiology and administration.

N43NT. Nursing Trends. Credit 3(3-0).

Study of trends in nursing involving legal aspects, economic security and areas of employment for the professional nurse.

N43SC. Senior Conference. Credit 6(6-0).

Course designed to promote increased knowledge and development in each of the basic areas of nursing.

EXPENSES AND FEES

Insurance fees are required of sophomores, juniors, and seniors at the beginning of each quarter.

Uniforms are required at the beginning of the sophomore year.

State Board Test Pool Examination for Seniors: \$15.00.

THE GRADUATE SCHOOL

THE GRADUATE SCHOOL

F. A. WILLIAMS, *Dean*

In 1891, the North Carolina General Assembly took the first step in the development of anticipated Graduate Education by providing for the establishment of The Agricultural and Technical College of North Carolina, an institution in practical agriculture, the mechanic arts and such branches of learning related thereto, not excluding academic and classical instruction. Since that time, the expansion of the institution has been both steady and rapid. Graduate education was not authorized at the College until 1939, when the North Carolina Legislature provided that the College offer graduate training in agriculture, technology, applied sciences and allied areas of study.

The Graduate Program was given further impetus by the General Assembly of North Carolina in 1957 when the Graduate School was approved to enlarge its program in teacher education, as well as such other programs of a professional or occupational nature as may be approved by the North Carolina Board of Higher Education, consistent with the appropriations made therefor.

The Graduate School endeavors to offer graduate education to prepare qualified students to become:

1. Teachers of vocational agriculture particularly in the public schools of North Carolina and the South.
2. Instructors of general agriculture in southern colleges.
3. Instructors in special teaching programs in agriculture.
4. County and assistant county agents in North Carolina and other southern states.
5. Specialized workers in other agricultural industries.
6. Teachers of industrial arts in the public schools of North Carolina and the nation.
7. Instructors of trades in the secondary schools of the nation.
8. Instructors in certain applied sciences in the smaller colleges of the nation.
9. Efficient administrators and supervisors in the public school system of North Carolina and other states.
10. Competent teachers of mathematics and science in the secondary schools of the nation.
11. Efficient teachers for all levels of public education.

12. Research workers in the field of education and science.
13. Individuals rooted in the art and science of self-development for job security in various areas of employment.
14. Qualified for further study at other colleges and universities.

The Graduate School also seeks to enable graduate students to:

1) broaden their knowledge of a given area of study, 2) increase their competence in a selected area of study, 3) develop power and interest in self-improvement, 4) become imbued with a true spirit of research, and 5) become widely read in those fields related to their chosen field of study.

The office of the Graduate School is located on the ground floor of Dudley Hall. The office is open from 8:30 a.m. to 5:00 p.m. daily, except Saturday. On Saturday, the hours are from 9:00 a.m. to 11:30 a.m.

ORGANIZATION

The Graduate School is under the administration of the Dean of the Graduate School, the Graduate Council, and several special committees.

The Graduate Council is responsible for the establishment and execution of all standards relating to the graduate program including admissions, teaching, quality of instruction, and teaching loads. In general the responsibilities of the Graduate Council are:

1. To formulate policies, procedures and practices relative to graduate education.
2. To set standards for curricula development.
3. To establish acceptable standards for all phases of graduate study.

The decisions of the graduate council are usually final, but they may be reviewed and approved by the Administration of the College.

GRADUATE OFFERINGS

Graduate programs are offered in the area of teacher-education including Agricultural Education, Industrial (Arts) Education, Education (elementary, secondary, and educational administration) and other areas of applied education and science. In addition to these regularly established programs of graduate studies, other courses in agriculture, technical and applied sciences may be pursued with the approval of the Graduate Council.

ADMISSION TO GRADUATE STUDY

Persons interested in entering graduate study at this institution should obtain two Applications for Admission from the Graduate School.

Applicants from the Agricultural and Technical College of North Carolina, or from an accredited college or university requiring substantially the same undergraduate program as is required at the College, may be admitted to full graduate standing pending approval for candidacy.

Graduate students with relatively low grades on their undergraduate record from any institution will be assessed an entrance penalty of from three to nine quarter hours. *Application for Admission* to graduate study and two transcripts of the applicant's undergraduate record must be submitted to and approved by the Dean of the Graduate School in advance of registration. Admission to graduate study does not automatically admit a student either to a particular major or to candidacy for the Master's degree.

Unconditional or Full Admission. Graduate students will be admitted unconditionally if they meet the following requirements:

1. Hold a baccalaureate degree from an accredited institution representing not less than four years, or the equivalent, of undergraduate work.
2. Have maintained an over-all average of not less than 2.00 to 2.49 under a 4-point system in their undergraduate work or 1.00 to 1.49 under the 3-point system.

Conditional or Temporary Admission. Graduate students who are unable to meet requirements for unconditional admission, may be granted *conditional or temporary admission* under the following conditions:

An applicant who holds a baccalaureate degree from an accredited institution but does not meet other criteria for full admission may be granted a temporary admission subject to the following conditions:

1. The student must have maintained an over-all average of 2.00 to 2.49 under the 4-point system or 1.00 to 1.49 under the 3-point system.
2. The student may be required to take additional courses in prescribed areas to overcome deficiencies according to needs indicated.

Candidacy for an Advanced Degree. Admission to graduate study does not imply admission to candidacy for an advanced degree. Such candidacy is determined after a student has demonstrated his ability to do studies of graduate caliber and also in passing a proficiency examination in English, a qualifying examination, and has made a satisfactory score on the Graduate Record Examination. Application forms for these purposes are obtainable at the office of the Graduate School.

Retention of Students in the Graduate School. Students will be requested to withdraw from the Graduate School if their qualifications

and/or scholarship do not continue to be acceptable. Unless a student maintains an average of "B" with not more than twelve hours below "B", he shall be disqualified for candidacy toward the Master's degree. A student automatically goes on probation as soon as his average falls below "B" and will be dismissed if he fails to bring his average up to "B" by the end of the following quarter.

A student must repeat not more than once, any course in which he has made a grade below "C" if that course is in his major or minor field.

If at the end of any quarter a student's average is so low that he cannot be expected to bring it up to "B", he will be dismissed.

VETERAN'S ADMISSION

The United States Veterans Administration has approved the Agricultural and Technical College of North Carolina as an institution for training under Public Law 16—Vocational Rehabilitation Act and Public Law 346—the Service Men's Readjustment Act of 1944 (G. I. Bill of Rights) and Public Law 550. The College, accordingly, encourages the enrollment of Veterans and offers its facilities to those qualified for attendance to the full extent of its accommodations in its Graduate School. The rules for admission and continued registration for demobilized students are, in general, the same as those operative for other students.

REGISTRATION AND ASSIGNMENT

Graduate students who have been admitted to graduate study will be assigned their advisers from the Dean of the Graduate School, and pay their fees during the regular registration periods.

Not more than fifteen quarter hours, including research, may be assigned in a single quarter. In-service or part-time graduate students follow the same procedure as full-time graduate students.

REQUIREMENTS FOR MASTER OF SCIENCE DEGREES

When graduate students pursue work in the Graduate School, they may work toward either of two graduate programs. They may work toward a Master of Science with a thesis, or toward a Master of Science without a thesis.

General Requirements. Students may meet specific residence requirements for each degree offered in the Graduate School by taking courses offered in the regular or summer sessions, as well as Evening and Saturday courses.

Graduate students who take full-time work will normally take fifteen (15) quarter hours each quarter or 9 quarter hours during a six

weeks summer session. However, if graduate students are employed full-time, they may not take more than six quarter hours of graduate work per quarter toward their degree.

The minimum requirements of candidates for the Master's degree is one academic year. Most times a longer period of residence will prove necessary.

Not more than nine (9) quarter hours of credit toward the Master's degree may be allowed for acceptable graduate work completed elsewhere. Such credit cannot therefore shorten the minimum period of full-time residence work required at the Agricultural and Technical College of North Carolina.

All work offered for the Master's degree, whether in the regular academic year or in the Summer Session, must be completed within a period of six years from the time the graduate program was started.

Program of Study. At the time of admission to the Graduate School, students on the advice of the Dean, are assigned to an adviser who advises them throughout their graduate program. The choice of an adviser is generally determined by the student's major subject or field.

The program of study may consist of courses chosen from one department or it may include such cognate courses from other departments as may in individual instances seem to offer greatest immediate and permanent values.

Admission to Candidacy. To become admitted to candidacy for a degree, a student must have been unconditionally admitted to graduate standing, and must have been approved by his adviser and the Dean of the Graduate School for his particular area of study. Candidacy is based on an examination of the student's undergraduate record and on the passing of a qualifying examination and have had the Graduate Record Examination. The minimum prerequisite is 15 quarter hours over and above any entrance deficiencies or penalties. All arrangements and agreements are tentative until the student has been admitted to candidacy for a degree.

Course Examinations. Final examinations are administered at the close of each quarter or summer session.

Qualifying Examinations. On the completion of fifteen (15) quarter hours of graduate work, graduate students are required to take a qualifying examination which includes:

- a. An appraisal of the prospective candidate's college record.
- b. An examination of the student's graduate work.
- c. An oral examination of not less than one hour which usually includes:
 1. Questions on general education.

2. Questions on educational methods and procedure.
3. Questions on the student's subject matter specialty including his specific subject matter and educational areas.
4. Questions on current socio-economic problems and current literature in the prospective candidate's field of study.
5. Questions which will demonstrate the student's ability to do creative or reflective thinking.

MASTER OF SCIENCE WITH THESIS

Graduate Students who elect or may be advised to include the writing of a thesis as a part of their Master's degree requirements should meet the following requirements:

1. They should be enrolled as a qualified graduate student.
2. They should be a certified graduate candidate by having successfully passed the qualifying examination.
3. They should have had the Graduate Record Examination.
4. They should complete a total of forty-five quarter hours of prescribed graduate work including three (3) quarter hours for the thesis.
5. They should include in the forty-five (45) quarter hours of graduate work for their degree a minimum of twenty-one (21) to twenty-four (24) quarter hours of professional education.
6. They should earn from fifteen (15) to eighteen (18) quarter hours of graduate work related to their teaching field—15 in elementary education and 18 in a secondary field.
7. They should earn from three (3) to six (6) quarter hours elective work.
8. They should successfully defend a thesis proposal before the Graduate Committee on Thesis Proposals.
9. They must maintain an average scholarship of "B" in their graduate program.
10. They should pass a final examination on the thesis.
11. They should prepare an acceptable abstract on the thesis.
12. They must complete all the work to be applied toward the degree within a period of six calendar years.

Thesis. The thesis must concern some problem in the graduate student's field of specialization. It should be in the nature of an original contribution through research in education regarded as an applied science. In some instances, it may be a mature and expert analysis and evaluation of existing knowledge as it applies to the larger problems in the area of education and other allied fields of study.

The thesis problem should recognize the following:

1. The problem should be of significance in its field.
2. The problem should be clearly defined.
3. The problem should raise distinct questions.
4. The data for the problem must be available to the student.
5. The problems should be within the ability of the student.
6. The problem should be in the student's field.

The thesis is expected to exhibit insight into a research problem and competence in the use of appropriate English, and scholarly methods.

The format of the thesis should follow the *Regulations for Thesis Writing* as set forth by the Graduate School.

Proposal. A thesis proposal is to be presented or defended before the *Committee on Thesis Proposals*. If the proposal is approved by the committee, the thesis will be completed under the direction of the student's adviser. The thesis proposal should be in the format as set forth in the *Regulation for Thesis Proposals*, the official manual of the Graduate School.

Abstract of Thesis. When graduate students file their thesis, they should also file four copies of an abstract of their thesis, not to exceed 2,000 words in length. The abstract should be approved by their adviser. The abstract will be published annually in the Graduate School's *Bulletin on Abstracts of Graduate Thesis*.

1. Be enrolled on a permanent basis in the Graduate School.
2. Take the Graduate Record Examination.
3. Be a certified master's candidate by having passed the qualifying examination.
4. Secure from the Graduate Office and fill out a declaration blank for the thesis plan of study.
5. Have an adviser for consultation in regards to the research problem for the thesis.
6. Secure a copy of *Proposal Regulations* from the Graduate Office.
7. Prepare and successfully defend a thesis proposal before the Thesis Proposal Committee.
8. Secure a copy of *Thesis Regulations* from the Graduate Office.
9. *Enroll in Techniques and Methods of Research.* This should be done during the student's first or second quarter of graduate study.
10. Complete the thesis and 42 hours of required course study.

11. Prepare an acceptable thesis abstract for publication in the *Graduate Bulletin of Abstracts*.
12. Apply for oral examination at the *Graduate Office*.
13. Secure clearance for final examination with respect to graduate credit by:
 - a. Obtaining a check on grades at both the *Graduate and Registrar's Office*.
 - b. Obtaining a date and hour for the final examination at the *Graduate Office*.
14. Take (and successfully pass) a final oral examination on the thesis.
15. Secure blanks from the Graduate Office for payment of *graduation fees at the Bursar's Office*.
16. Deposit four corrected copies of both the thesis and abstract with the *Graduate Office*.
17. Make plans to attend the *Annual Commencement Exercises*.

MASTER OF SCIENCE WITHOUT A THESIS

Graduate students who elect or may be advised not to write a thesis as a part of their master's degree requirements should meet the following requirements:

1. They should be admitted unconditionally to graduate study in the Graduate School, or, if they are allowed to enter conditionally, they should have removed the conditions satisfactorily.
2. They should have had the Graduate Record Examination.
3. They should successfully pass the qualifying examination.
4. They should complete a total of fifty-four (54) quarter hours of required graduate work.
5. They should include in the fifty-four (54) quarter hours of graduate work for their degree a minimum of thirty-three hours of prescribed work in education.
6. They should earn from fifteen (15) to eighteen (18) quarter hours of graduate work in their teaching field.
7. They should earn from nine (9) to twelve (12) hours in electives, or specialized professional courses as prescribed in their area of teacher education.
8. They must maintain an average scholarship of B in their graduate program.
9. They will not be required to take a foreign language, however a reading knowledge of a foreign language is desirable.

10. They should have prepared an investigative paper and presented it in Education 632, Seminar in Educational Problems.
11. They must complete all the work to be applied toward the degree within a period of six calendar years.
12. They should attend the *Annual Commencement Exercises*.

The Investigative Paper. The investigative paper should represent mature judgment and a command of the techniques generally associated with the broadening of one's knowledge of research as involved in gathering, organizing and interpreting data in the library as well as primary sources.

Graduate students should present their investigative problem to their adviser, together with an outline and a statement of the procedure. After the topic has been approved by your adviser, students should complete and present their paper in *Education 632, Seminar in Educational Problems*. A guide for the preparation of the investigative report has been prepared by the Graduate School.

After students have presented their paper to the seminar, they should have four copies bound and deposited with the Graduate School.

General Instructions or Steps for the Non-Thesis Plan are as follows:

1. Be enrolled as a permanent qualified student.
2. Be a certified graduate candidate by having successfully passed the qualifying examination and have taken the Graduate Record Examination.
3. Secure from the Graduate School and file a declaration blank as to the non-thesis plan of graduate study.
4. Have an adviser for consultation on the *written report*.
5. Enroll in Education 612, Techniques of Education Research.
6. Secure the approval of the title of the written report from the adviser.
7. Secure a copy of Regulations for *Graduate Written Reports* from the *Graduate Offices*.
8. Complete fifty-four (54) hours of graduate work including all required courses.
9. Secure clearance for final examination with respect to graduate credit by:
 - a. Obtaining an official check on grades at both the *Graduate and the Registrar's Offices*.
 - b. Obtain a date and hour for the final examination from the Dean of the Graduate School.

10. Secure blanks from the *Graduate Office* for payment of graduation fees at the *Bursar's Office*.
11. Deposit four copies of the corrected report with the Graduate School—one should be a bound copy.
12. Make plans to attend the *Annual Commencement Exercises*.

FIELDS OF SPECIALIZATION IN GRADUATE EDUCATION

The Graduate School of the Agricultural and Technical College of North Carolina attempts to meet the professional needs and interests of graduate students in the basic fields of applied educational specialization which are adapted to the areas of study at the College. These courses will count toward a Master's degree as well as a Master's certificate.

In taking graduate work in education, students specialize in teacher education. Academic minors are offered in a number of fields depending largely upon the teacher certification of graduate students. Most graduate students follow one of the following programs:

Agricultural Education. Graduate courses are offered in agricultural education for teachers of vocational agriculture, county agents, community leaders, agricultural specialists, and other graduate students who are concerned with the broad problems of vocational education in the American society. The program is designed primarily to give a working knowledge for solving problems in rural living generally encountered by professional agricultural workers.

Industrial (Arts) Education. Graduate offerings in industrial (arts) education make it possible for graduate students to meet the peculiar needs and interests for this area of vocational specialization. In this area of study, students can take work that will prepare them (1) to serve as head of an industrial department in land-grant institutions, (2) to teach industrial arts and trades in high schools, junior colleges, senior colleges, technical and vocational institutes, (3) to supervise programs of industrial and vocational education in city and county public school systems, (4) to teach or supervise adult education programs in schools, colleges and industrial firms.

Education. Persons who are teaching or planning to teach in elementary and secondary schools and desire to take further work in those two levels of public school education, may prepare for a position as an effective classroom teacher, critic teacher, or special teacher.

Graduate students may select from several areas of academic subjects in education in order to qualify for various teaching specialties.

Educational Administration. Offerings in this area are designed primarily to give the basic understanding for becoming supervisors of instruction, principles of elementary and high schools, directors of curriculum, and a variety of administrative and supervisory positions in all levels of education.

Graduate work in the above areas leads to both a Master's degree and a Master's certificate for the state of North Carolina and a number of other states in the nation.

PROGRAM OF STUDY IN GRADUATE EDUCATION

The graduate program at the Agricultural and Technical College of North Carolina is organized in terms of major preparation in the fields of Agricultural Education, Industrial (Arts) Education, Education and other areas of Applied Science and Technology.

Areas of graduate study as well as course programs should be selected in terms of undergraduate majors, teacher certification, undergraduate deficiencies and professional objectives.

Regardless of the student's area of study the following *Core Courses or Basic Areas of Educational Preparation* must be included in the student's graduate program, namely:

1. History of Education
2. Principles of Teaching
3. Curriculum
4. Educational Psychology

AGRICULTURAL EDUCATION

The requirements for the Master of Science degree with a major in Agricultural Education along with a North Carolina Graduate Teacher's Certificate are as follows:

The Non-Thesis Plan. Fifty-four (54) quarter hours are required under the non-thesis plan with a distribution of credits as follows:

1. Elective Core Program 6-12 quarter hours
 - a. Education 605, Principles of Teaching 3 hrs.
 - b. Education 606, The Curriculum 3 hrs.
 - c. Education 607, History of Education 3 hrs.
 - d. Psychology 621, Educational Psychology 3 hrs.
2. Other Professional Courses 12 quarter hours
 - a. Education 608, Philosophy of Education 3 hrs.
 - b. Education 623, Educational Sociology 3 hrs.
 - c. Education 631, Educational Statistics 3 hrs.
 - d. Education 632, Seminar in Educational Problems .. 3 hrs.

3. Academic Program 18 quarter hours
(Including Agronomy, Horticulture, etc.)
4. Professional Program in Agricultural Education
12-18 quarter hours
5. Written report (investigative paper)

The Thesis Plan. Forty-five (45) quarter hours are required under the thesis plan with a distribution of credits as follows:

1. Core Program 12 quarter hours
(Same as non-thesis plan)
2. Professional Program 12 quarter hours
(Courses in Agricultural Education)
3. Academic Program 18 quarter hours
(Including Agronomy, Horticulture, Poultry, etc.)
4. Thesis (Original research) 3 hrs.

INDUSTRIAL (ARTS) EDUCATION

The requirements for the Master of Science degree in Industrial Arts Education along with a North Carolina Graduate Teacher's Certificate are as follows:

The Non-Thesis Plan. Fifty-four (54) quarter hours are required under the non-thesis plan with a distribution of credits as follows:

1. Core Program 12 quarter hours
 - a. Education 605, Principles of Teaching 3 hrs.
 - b. Education 606, Curriculum 3 hrs.
 - c. Education 607, History of Education 3 hrs.
 - d. Psychology 621, Educational Psychology 3 hrs.
2. Other Required Professional Courses 12 quarter hours
 - a. Education 608, Philosophy of Education 3 hrs.
 - b. Education 623, Educational Sociology 3 hrs.
 - c. Education 631, Educational Statistics 3 hrs.
 - d. Education 632, Seminar in Educational Problems .. 3 hrs.
3. Academic Program 18 quarter hours
(Includes technical or shop courses in Industrial Arts)
4. Professional Program 12 quarter hours
(Professional courses in Industrial Education)
5. Written Report (investigative paper)

The Thesis Plan. Forty-five (45) quarter hours are required under the thesis plan with a distribution of credit as follows:

1. Core Program 12 quarter hours
(Same as non-thesis plan)
2. Professional Program 12 quarter hours
(Same as non-thesis plan in Industrial Education)
3. Academic Program 18 quarter hours
(Same as non-thesis plan)
4. Thesis (Original research) 3 quarter hours

EDUCATION

The requirements for the Master of Science degree in Education at the secondary level are as follows:

The Non-Thesis Plan. Fifty-four (54) quarter hours are required under the non-thesis plan with a distribution of credit as follows:

1. Core Program 12 quarter hours
 - a. Education 605, Principles of Teaching 3 hrs.
 - b. Education 606, Curriculum 3 hrs.
 - c. Education 607, History of Education 3 hrs.
 - d. Psychology 621, Educational Psychology 3 hrs.
2. Other Required Professional Courses 18 quarter hours
 - a. Education 608, Philosophy of Education 3 hrs.
 - b. Education 612, Techniques and Methods of Research 3 hrs.
 - c. Education 623, Educational Sociology 3 hrs.
 - d. Education 631, Educational Statistics 3 hrs.
 - e. Education 632, Seminar in Educational Problems .. 3 hrs.
 - f. Guidance 601, Field of Guidance 3 hrs.
3. Academic Program 18 quarter hours
(These 18 hours must be pursued in the student's certification area)
 - a. Secondary Areas:
 - (1) Biology 18
 - (2) Chemistry 18
 - (3) English 18
 - (4) French 18
 - (5) History 18
 - (6) Mathematics 18
 - (7) Science 18
 - Biology 6
 - Chemistry 6
 - Geography 6
 - (8) Social Science 18
 - b. Elementary:
 - Subject matter courses 18

4. Electives (any area) 6 quarter hours
5. Written Report (investigative paper)

The Thesis Plan. Forty-five (45) quarter hours are required under the thesis plan with a distribution of credits as follows:

1. Core Program 12 quarter hours
(Same as the non-thesis plan)
2. Other Required Professional Courses 9 quarter hours
 - a. Guidance 601, Field of Guidance 3 hrs.
 - b. Education 612, Techniques and Methods of Research . 3 hrs.
 - c. Psychology 622, Measurements and Evaluation 3 hrs.
3. Academic Program 18 quarter hours
(Same as under the non-thesis plan)
4. Elective (any area) 3 quarter hours
5. Thesis (Original research) 3 quarter hours

The requirements for the Master of Science degree in Education with emphasis on the elementary level are as follows:

The Non-Thesis Plan. Fifty-four (54) quarter hours are required under the non-thesis plan with a distribution of credits as follows:

1. Core Program 12 quarter hours
(Same as other programs)
2. Other Required Professional Program 18 quarter hours
(Same as the secondary level)
3. Academic Program 15 quarter hours
(Same as non-thesis program)
4. Electives (any area) 9 quarter hours
5. Written Report (investigative paper)

The Thesis Plan. Forty-five (45) quarter hours are required under the thesis plan with a distribution of credits as follows:

1. Core Program 12 quarter hours
(Same as Education at the secondary level)
2. Other Required Professional courses 9 quarter hours
(Same as Education at the secondary level)
3. Academic Program 15 quarter hours
(These 15 hours should be pursued in academic work suitable for grades taught or planned to be taught)
4. Electives (any area) 6 quarter hours
5. Thesis 3 quarter hours

Requirements for the Master of Science degree in Education with emphasis in educational administration are as follows:

The Non-Thesis Plan. Fifty-four (54) quarter hours are required under the non-thesis plan with a distribution of credits as follows:

1. Core Program 12 quarter hours
(Same as other plans)
2. Other Required Professional Courses 36 quarter hours
 - a. Education 609, Philosophy of Education 3 hrs.
 - b. Education 609, School Planning 3 hrs.
 - c. Education 612, Techniques and Methods of Research 3 hrs.
 - d. Education 622, Measurement and Evaluation 3 hrs.
 - e. Education 623, Educational Sociology 3 hrs.
 - f. Education 624, Elementary School Administration .. 3 hrs.
 - g. Education 625, Elementary School Supervision 3 hrs.
 - h. Education 626, H. S. Administration 3 hrs.
 - i. Education 627, H. S. Supervision 3 hrs.
 - j. Education 631, Educational Statistics 3 hrs.
 - k. Education 632, Seminar in Educational Problems .. 3 hrs.
 - l. Guidance 601, the Field of Guidance 3 hrs.
3. Academic Program (Social Science) 3 quarter hours
4. Electives (any area) 3 quarter hours
5. Written Report (Investigative paper)

The Thesis Plan. Forty-five (45) quarter hours are required under the thesis plan with a distribution of credits as follows:

1. Core Program 12 quarter hours
(Same as for other areas in graduate education)
2. Other Required Professional Courses 24 quarter hours
(Same as under non-thesis plan, however,
excluding Ed. 608, 623, 631 and 632)
3. Academic Program 3 quarter hours
(A social science course)
4. Electives (any area) 3 quarter hours
5. Thesis (Original Research) 3 quarter hours

MASTER CERTIFICATES

Graduate students who desire to qualify for teaching and administrative and supervisory certificates for North Carolina, will find the qualifications to be as follows:

Graduate Certificates for Teachers:

I. Graduate Secondary Teacher's Certificates:

- A. Hold or be qualified to hold the Class A High School Teacher's Certificate.
- B. Have three or more years' teaching experience.
- C. Have a Master's degree from an institution of higher learning with recognized graduate standards approved by the State Department of Public Instruction. This would include:

	<i>S.H.</i>
1. Subject matter in the certificate fields	12
2. Education (philosophy, principles, curriculum, psychology, etc.)	6
3. Electives	12

II. Graduate Elementary Teacher's Certificate:

- A. Have or be qualified to hold the Class A Primary or Grammar Grade Certificate.
- B. Have three or more years' teaching experience.
- C. Hold a Master's degree from an institution of higher learning with recognized graduate standards approved by the State Department of Public Instruction. This credit would include:

1. Academic work	6-12
This should include subject matter in those fields in which there are manifest weaknesses in the equipment of the individual, as well as subject matter that would strengthen points already strong.	
2. Education (philosophy, principles, curriculum)	6
3. Electives	12-18

Validity:

These certificates have the same validity as the Class A certificates. The Graduate Elementary Teacher's Certificate is valid for teaching in the elementary school, grades 1-8 inclusive, and the Graduate Secondary Teacher's Certificate is valid for teaching in the high school, grades 9-12 inclusive, the subject or subjects appearing thereon.

Renewal:

Initially the certificates are valid for a period of five years from date of qualification. The first renewal requires graduate credit for six semester hours. Subsequent renewals require six semester hours of graduate credit, as in the first renewal.

III. PRINCIPAL'S CERTIFICATE:

- A. Hold or be qualified to hold the Class A teacher's certificate (secondary or elementary).
- B. Have three years' teaching experience within the past five years.
- C. Hold a Master's degree from an institution of higher learning with recognized graduate standards approved by the State Department of Public Instruction.
- D. Have credit for a minimum of 12 semester hours (18 recommended) of graduate work in Education selected from the following areas:
 - 1. Fundamental Bases of Education
 - a. The curriculum, at least 2 semester hours required
 - b. Human Growth and Development
 - c. Social Foundations of Education
 - 2. Instructional and Supervisory Teachings
 - a. Principles of Supervision, at least 2 semester hours required
 - b. Teaching Procedures
 - c. Guidance and Pupil Personnel and Accounting
 - d. Measurement
 - 3. Organization and Administration
 - a. High School Administration, at least 2 semester hours required
 - b. Elementary School Administration, at least 2 semester hours required
 - c. General Administration
 - d. School Plant
 - e. Staff Personnel
 - f. Community Relations
- E. Electives 12-18 semester hours
 This elective credit may be of the candidate's choice, subject to such requirements as the institution may have for the Master's degree, but it should be designed primarily to add to one's equipment as a teacher.

Validity:

The certificate is valid for the principalship of a strictly secondary school, union school, elementary school, for general supervision, and for teaching on whatever level requirements for teachers' certificates have been met. It is required for the principalship of classified schools, that is, schools with seven or more teachers. Information on any exceptions, if any, may be secured from the Division of Professional Service, State Department of Public Instruction, Raleigh, N. C.

OTHER INFORMATION ON GRADUATE EDUCATION

Grading System. The work of graduate students performed in connection with research work, and the thesis should be reported as "P" indicating progress until the work has been completed when a final grade is assigned. All other work is reported as "A" Excellent, "B" Average, and "C" Below Average. A grade below "C" is not accepted for graduate credit. A grade of "C" must be compensated by earning an "A" in another course. Should a candidate receive more than three grades below "B" the Dean of the Graduate School may request that the student discontinue graduate study.

Withdrawal From The College. Graduate students who desire to withdraw from the College must apply to the Dean of the Graduate School for permission to withdraw in good standing. If a student leaves the College at any time during the Quarter, without communicating with the Dean, he will be marked as having failed in all of his courses for the Quarter.

The written permission of the Dean shall be filed with the Registrar at once by the student in order that the proper entry may be made upon the College record.

Changes in Graduate Courses. College regulations allow students to make changes in their schedules within one week from the day classes begin. To make changes in your schedule, take your schedule card to the Office of the Graduate School and ask for a change-of-course card.

Discuss the changes you wish to make with your adviser. Fill in the *change* card under your adviser's supervision. Get the signature of the adviser on the change card.

Return the change-of-course card to the Dean's office for his signature. Get the class card for whatever course you are adding and fill it in. Return both cards to the Registrar's Office.

College Seniors. Regularly enrolled seniors who lack not more than six quarter hours to meet requirements for graduation may enroll in additional courses in the 500 Series to complete a normal schedule. Such additional courses may be counted towards the Master's Degree, after the Bachelor's Degree has been granted, but they will not be counted for meeting requirements for both the Bachelor's and the Master's Degree.

College Faculty—Staff and Graduate Work. Full-time members of the college staff, with the president's approval, may be permitted to register in the Graduate School, provided such would not interfere with their regular college duties.

Course Announcements. The quarter in which a course is to be offered will be found in the regular college graduate schedule of courses. The College reserves the right to discontinue any course for which the registration is not sufficiently large. As would be expected, at the graduate level, student demands frequently make it necessary to vary course offerings made in advance.

Responsibility of Graduate Students. The responsibility of course enrollment rests entirely upon graduate students. They should read the regulations carefully, and should follow them in all matters.

Members of the faculty and the Dean of the Graduate School are always ready to advise students and assist in planning their study programs.

Graduate Courses During the Summer. The College offers opportunities to pursue regular graduate courses leading toward the Master's degree during the summer in connection with the Summer School. Details regarding courses offered, facilities for study, and environment may be found in the Summer School Catalogue, a copy of which is available upon request to the Director of the Summer School or upon request to the Graduate Office.

GENERAL INFORMATION

Housing. The College provides housing accommodations for a limited number of graduate students. Information on housing for female students will be furnished by the Dean of Women. Requests for information on housing for male students should be directed to the Dean of Men.

Mature graduate students are able to obtain rooms at a reasonable rate in private homes relatively near the College. Prospective graduate students who are married and desire housing should contact either the Dean of Men or the Dean of Women.

The Library. The new College library is one of the largest in the state. It provides an inter-library loan service through which graduate students may borrow materials from other libraries.

Fees and Tuition. Full-time graduate students pay the same fees as undergraduate students, while fees for part-time students are at a reasonable rate. (See Fees on page .)

Graduation Fee. Before receiving a Master's degree, students who follow the thesis plan are required to pay a graduation fee of \$50.00 to cover the costs of library usage, diploma, thesis binding, and publication of an abstract. Graduate students who follow the non-thesis plan are required to pay a graduation fee of \$25.00.

GRADUATE COURSES OF INSTRUCTION*

Graduate courses are offered in the major departments of the College and are on single-term (quarter) basis.

Courses in the 500 series which may be pursued by graduate students are listed under the department of the three major colleges of the institution.

AGRICULTURAL ECONOMICS

- 601. Economics of Agricultural Production.
- 602. Farm Organization and Management.
- 603. Land Economics.
- 604. Current Problems in Agricultural Economics.
- 605. Research in Agricultural Economics.

AGRICULTURAL EDUCATION

- 601. Administration and Supervision.
- 602. Curriculum Construction in Vocational Agriculture.
- 603. History of Vocational Agriculture.
- 604. Community Problems in Agriculture.
- 605. Public Relations in Agriculture.
- 606. Research in Vocational Education.

AGRONOMY

- 631. The Soils of North Carolina.
- 634. Legumes and Grasses.
- 635. Crop Breeding.

ANIMAL HUSBANDRY

- 601. Research Studies in Animal Husbandry.
- 602. Poultry Research.
- 603. Seminar.

BACTERIOLOGY

- 601. Soil Bacteriology.
- 602. Dairy Bacteriology.

CHEMISTRY

- 601. Problems in Organic Chemistry.

*Description for the 600 series may be found in the Graduate Section of the Summer School Bulletin.

EDUCATION AND PSYCHOLOGY

- 601. Theory of American Public Education.
- 605. Principles of Teaching.
- 606. The Curriculum.
- 607. History of American Education.
- 608. Philosophy of Education.
- 609. School Planning.
- 610. Special Workers and Services in Rural Education.
- 611. Audio-Visual Aids Program.
- 612. Techniques and Methods of Research.
- 613. Organization of Audio-Visual Programs.
- 613R. Problems in Rural Education.
- 614. Audio-Visual Aids Workshop.
- 615. Problems and Trends in Teaching Social Sciences.
- 616. Problems and Trends in Teaching Science.
- 617. Mental Hygiene for Teachers.
- 618. Childhood Education.
- 621. Educational Psychology.
- 622. Measurement and Evaluation.
- 623. Educational Sociology.
- 624. Elementary School Administration.
- 625. Elementary School Supervision.
- 626. High School Administration.
- 627. High School Supervision.
- 628a. Adult Education
- 628b. Adult Education.
- 629. The Community College and Post-Secondary School Education.
- 630. Principles of College Teaching.
- 631. Educational Statistics.
- 632. Seminar in Educational Problems.
- 639E. Issues in Elementary Education.
- 639S. Issues in Secondary Education.
- 640E. Research in Elementary Education.
- 640S. Research in Secondary Education.
- 646. Comparative Education (Study-Tour Abroad).

ENGLISH

- 601. Expository Writing.
- 602a. Studies in English Literature.
- 602b. Studies in English Literature.
- 603a. Problems in English.
- 604a. Aspects of American Literature.
- 604b. Aspects of American Literature.
- 605. Modern World Fiction.

FOREIGN LANGUAGES

- 504. The French Theatre.
- 505. The French Novel.
- 506. French Syntax.

GEOGRAPHY AND GEOLOGY

- 601. The Physical Universe.
- 602. Geology.
- 603. Geography of North America.
- 604. Conservation of Natural Resources.

GOVERNMENT

- 501. The Federal Government.
- 502. State and Local Government.
- 503. Government Finances.
- 505. The Constitution and Minorities.
- 506. Research and Current Problems.

GUIDANCE

- 501. Introduction to Guidance.
- 602. Techniques of Individual Analysis.
- 603. Measurement for Guidance.
- 604. Educational and Occupational Information.
- 605. Introduction to Counseling.
- 606. Case Studies in Counseling.
- 607. Counseling Practicum.
- 608. Organization and Administration of Guidance Services.
- 609. Guidance for Rural Youth.
- 610. Guidance in the School.
- 614. Occupational Information.
- 615. Diagnostic Techniques in Guidance.

HISTORY

- 604. The Negro in the Reconstruction of the South.

INDUSTRIAL ARTS

- 506. Plastic Craft.
- 508. Handicrafts.
- 608. Advanced Furniture Design and Construction.
- 609. Electricity for Industrial Arts Teachers.
- 611, 612. Problems in Industrial Arts.
- 613. Comprehensive General Shop.
- 614. Advanced Drafting Techniques.
- 623. Construction and Use of Instructional Aids.

INDUSTRIAL EDUCATION

- 502. Teaching Problems in Industrial Education.
- 504. History and Philosophy of Industrial Education.
- 520. Diversified Occupations Programs.
- 521. Organization of Related Study Material.
- 604. Supervision and Administration of Industrial Education.
- 605. Curriculum Laboratory in Industrial Education.
- 606. Research and Literature in Industrial Education.
- 624. Research and Literature in Industrial Education.
- 631. General Industrial Education Programs.

MATHEMATICS

- 501. Vector Analysis.
- 502. Mathematics of Life Insurance.
- 503. Integrated Mathematics I.
- 504. Integrated Mathematics II.
- 505. Numerical Computation.
- 506. Advanced Calculus.
- 507. Mathematical Statistics.
- 508. College Geometry.
- 601. Theory of Equations.
- 603. Advanced Differential Equations.

AGRONOMY

- 601. Research in Crops.
- 602. Research in Soils.

PHYSICS

- 501. Theoretical Physics I.
- 502. Theoretical Physics II.
- 503. Electromagnetism.
- 504. Particles of Modern Physics.

POULTRY SCIENCE

- 601. Production Studies and Experiments.

VOCATIONAL EDUCATION

- 619. Techniques in Educational and Vocational Guidance.
- 622. Tests and Measurements in Vocational Education.
- 628. Research in Special Problems.

ZOOLOGY

- 601. Special Problems in Insect Control.

THE TECHNICAL INSTITUTE

THE TECHNICAL INSTITUTE

The Technical Institute meets the growing demand for the technically trained personnel in the expanding industries of North Carolina and throughout the country.

The institute was organized to offer technological training and a background in general studies to provide both the skills and intellectual development for the productive and intelligent citizen.

Curricula

The Technical Institute offers five two-year programs and one three-year program. An Associate Degree in Science is awarded for satisfactorily completing either of the courses.

Two-Year Programs

Automotive Technology
Air Conditioning and Refrigeration Technology
Drafting Technology
Electrical Technology
Mechanical Technology

Three-year Program

Building Construction Technology

Building Construction curriculum is designed to prepare persons to work as foremen, superintendents, or contractors in the construction industry. This course is especially designed for those who have acquired basic skills in building trades before entering college.

The curricula are designed to meet the needs of the following types of students:

1. Those who for financial or other reasons cannot afford to spend four years in training.
2. Those who desire proficiency in a specific area of technology.
3. Employed persons who need additional technical training in their chosen fields.

Admission

General admission requirements are the same as those listed for admission to the College, including at least one unit each of high school algebra, geometry and science. A student with sixteen high school units may be admitted without the required units in mathematics, but will be expected to correct such deficiencies by taking additional courses, without credit after enrolling.

Graduation Requirement

Students are required to satisfactorily complete the prescribed course of study they pursue with a minimum grade point average of 2.00.

Military training must be taken as required by the College.

AIR CONDITIONING AND REFRIGERATION TECHNOLOGY

The purpose of this course is to prepare the students to meet the requirements of the various branches of the refrigeration industry. Students who complete the requirements of this course will be qualified for employment as technicians, operating engineers, servicemen, and also for work in other areas of the air conditioning and refrigeration industry. If desired, students may establish businesses for themselves. Training consists of technical information, laboratory experiments, and practical projects in refrigeration.

CURRICULUM

First Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
T21 A.R., T23 A.R., T25 A.R.	3(3-0)	3(3-0)	3(3-0)
T22 A.R., T24 A.R., T26 A.R.	2(0-6)	2(0-6)	2(0-6)
Math, 311, 312, 313	5(5-0)	5(5-0)	5(5-0)
English 211, 212	5(5-0)	5(5-0)	.....
Mil. Sc. 211, 212, 213	2(2-2)	2(2-2)	2(2-2)
I.A. 326 .....	.....	.....	3(0-6)
T11 A.T. ....	.....	.....	3(2-2)
Elective .....	.....	3( )	.....
T11 E.T.	3(2-3)	.....	.....
	<hr/>	<hr/>	<hr/>
	20	20	18

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
T27 A.R., T28 A.R., T29 A.R.	5(3-6)	5(3-6)	5(3-6)
Physics 321, 322	5(3-4)	5(3-4)	.....
B.A. 351	5(5-0)	.....	.....
M.E. 311, 312	3(0-6)	3(0-6)	.....
Mil. Sc. 221, 222, 223	2(2-2)	2(2-2)	2(2-2)
Acct. 301 .....	.....	3(3-0)	.....
T64 B.C. ....	.....	.....	3(2-3)
T11 M.T. ....	.....	.....	3(2-2)
Human Relations, T11 B.C. ....	.....	.....	5(5-0)
	<hr/>	<hr/>	<hr/>
	20	18	18

DESCRIPTION OF COURSES

T21 A.R. Basic Refrigeration. Credit 3(3-0).

A study of the basic principles of refrigeration and electricity. Typical application of refrigeration cycles and the value of refrigeration tables.

T22 A.R. Refrigeration Equipment Laboratory. Credit 2(0-6).

Application of the principles learned in T21 A.R.

T23 A.R. Commercial Refrigeration. Credit 3(3-0).

Purpose and construction of refrigeration units and refrigerants—regulations and codes. Commercial refrigeration load calculation—sizing and selection of pipes, valves, fittings, and controls.

T24 A.R. Commercial Refrigeration Laboratory. Credit 2(0-6).

Practical problems dealing with the construction of refrigeration units. Continuation of T23 A.R.

T25 A.R. Special Systems and Refrigeration Trouble Analysis. Credit 3(3-0).

A study of all the components of refrigeration systems and their troubles. Multiple and cascade systems, calculations of refrigeration piping, the refrigerant charge, water piping, and water chillers.

T26 A.R. Refrigeration Systems Laboratory.

Actual hook-ups of special systems outlined in T25 A.R.

T27 A.R. Principles of Air Conditioning. Credit 5(3-6).

A study of the various fundamentals involved in the conditioning of air for comfort. Sensible and latent heat, heat transfer, states of matter and humidity.

T28 A.R. Air Conditioning Systems and Controls. Credit 5(3-6).

A continuation of T27 A.R. with more emphasis placed upon the control of air, temperature, moisture, and humidity. Control, psychrometric properties of air and air conditioning systems, self contained and remote.

T29 A.R. Heat Loads. Credit 5(3-6).

Types of heat loads, heat transmission and other types of systems not covered in T29 A.R. such as heat pumps, and automobile air conditioning.

AUTOMOTIVE TECHNOLOGY

The purpose of the automotive program is to develop technicians who have the ability to diagnose the technical difficulties in the operation of automotive equipment. Special emphasis is placed upon technical information and knowledge of basic scientific principles.

The training includes information on basic management and business operations. This course should meet the needs of persons having good technical, mechanical, and executive abilities who wish to qualify as technical specialists or who desire to prepare themselves for supervisory positions.

The Automotive Technology program consists of two options:

1. Auto Mechanics
2. Auto Body and Metal

The first three quarters of the curriculum are the same for the two options.

CURRICULUM

First Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 211, 212	5(5-0)	5(5-0)	.....
Math 311, 312	5(5-0)	5(5-0)	.....
Fundamentals of Electricity and Mag- netism, T11 E.T.	3(2-3)	.....	.....
Theory of Internal Combustion Engines, T21 A.T.	3(2-2)	.....	.....
Military Science 211, 212, 213	2(2-2)	2(2-2)	2(2-2)
Fuels and Carburetion, T22 A.T. ....	.....	3(3-0)	.....
Internal Combustion Engine Operation and Testing, T23 A.T. ....	.....	3(1-4)	.....
Fundamentals of Metal Joining, T11 A. T. .	.....	.....	3(2-2)
Automotive Electric System and Accessories, T24 A.T. ....	.....	.....	5(3-4)
Accounting 301 .....	.....	.....	3(3-0)
B.A. 351 .....	.....	.....	5(5-0)
	18	18	18

OPTION I—AUTO MECHANICS

CURRICULUM

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Advanced Electrical Diagnosis and Engine Tune-Up, T25 A.T.	3(2-4)	.....	.....
Fundamentals of Hydraulics, T26 A.T. ...	2(2-2)	.....	.....
Physics 311, 312	5(3-4)	5(3-4)	.....
Internal Combustion Engine, T27 A.T. ...	.....	.....	3(2-2)

Automatic Transmissions and Power

Train, T28 A.T., T29 A.T.	5(2-6)	5(2-6)	-----
Military Science 221, 222, 223	2(2-2)	2(2-2)	2(2-2)
Front End Geom. and Brakes System, T30 A.T.	-----	3(1-4)	-----
Transportation Problems, T31 A.T.	-----	-----	2(2-0)
Fundamentals of Metal Joining Processes, T12 A.T.	3(2-2)	-----	-----
Machine Tool Lab, T11 M.T., T12 M.T. ...	-----	3(2-2)	3(2-2)
Shop Planning and Operational Procedures, T32 A.T.	-----	-----	5(3-4)
Elective	-----	-----	3()
	<hr/> 20	<hr/> 18	<hr/> 18

OPTION II—AUTO BODY SCHEDULE

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Auto Body Design Construction, T40 A.T. .	3(3-0)	-----	-----
Physics 311, 312	5(3-4)	5(3-4)	-----
Military Science 221, 222, 223	2(2-2)	2(2-2)	2(2-2)
Fundamentals of Metal Joining Processes, T12 A.T.	3(2-2)	-----	-----
Machine Tool Lab, T11 M.T.	-----	3(2-2)	-----
Fundamentals of Painting, T41 A.T.	3(2-3)	-----	-----
Auto Body Rebuilding & Repair, T42 A.T.	-----	5(2-6)	-----
Front End Geometry and Brake System, T30 A.T.	-----	3(1-4)	-----
Ind. Metal Technology, T14 M.T.	3(2-2)	-----	-----
Transportation Problems, T31 A.T.	-----	-----	2(2-0)
Shop Planning and Operational Processes, T32 A.T.	-----	-----	5(3-4)
Elective	-----	-----	3()
Auto Body Painting & Finishing, T43 A.T. .	-----	-----	5(3-4)
	<hr/> 19	<hr/> 18	<hr/> 17

DESCRIPTION OF COURSES

T11 A.T. Fundamentals of Metal Joining. Credit 3(2-2).

The course is designed to give the student the knowledge and understanding of the fundamentals of welding, brazing and soldering.

T12 A.T. Fundamentals of Metal Joining Processes. Credit 3(2-2).

This course is designed to give the student the understanding of the fundamentals of the different processes of metal joining, which include electric arc welding, heliarc welding, spot welding, oxyacetylene gas welding, brazing, and soldering.

T13 A.T. Advanced Fundamentals of Metal Joining Processes. Credit 3(2-2).

This is a continuation of T12 A.T. designed to give practical experience in the operation of tools required in the processes of welding and in brazing and soldering.

T21 A.T. Theory of Internal Combustion Engine. Credit 3(2-2).

Theory of operation of internal combustion engine with practical laboratory work with disassembly, assembly, and study of fundamental operations with basic elements of repair.

T22 A.T. Fuels and Carburetion. Credit 3(3-0).

Theory and types of common fuels used and how they affect internal engines. Principle of fuel pumps and carburetion.

T23 A.T. Internal Combustion Engine Operation and Testing. Credit 3(1-4).

A lecture demonstration course including methods of using testing equipment, motor analyzers, types of tests and equipment.

T24 A.T. Automotive Electric System and Accessories. Credit 5(3-4).

Theory, inspection and maintenance of ignition systems. Theory of operation of batteries, cranking motors, charging systems and lighting.

T25 A.T. Advance Electrical Diagnosis of Engine Tune-Up. Credit 3(2-4).

Theory and use of modern electrical testing equipment. Diagnosis, troubleshooting, testing, and techniques of repairing electrical units.

T26 A.T. Fundamentals of Hydraulics. Credit 2(2-2).

A study of basic mechanics as applied to automatic transmissions, power steering, power brakes, etc.

T27 A.T. Internal Combustion Engine Mechanics. Credit 3(2-2).

Major overhaul, engine rebuilding, use of boring bar, cylinder honing, etc.

T28 A.T. Automatic Transmissions and Power Train. Credit 5(2-6).

Theory, operation and inspection of clutches, transmissions, differentials and drive lines. Theory, operation of automatic transmissions, torque converters, fluid couplings and overdrives.

T29 A.T. Automatic Transmissions and Power Train. Credit 5(2-6).

Disassembly and assembly of automatic transmission and power train units.

T30 A.T. Front End Geometry and Brake Systems. Credit 3(1-4).

Operation and maintenance technique of suspension systems, steering gears, wheel alignment and brakes system.

T31 A.T. Transportation Problems. Credit 2(2-0).

Problems in selecting equipment, servicing fleet and commercial vehicles.

T32 A.T. Shop Planning and Operational Procedures. Credit 5(3-4).

This course is designed to give the student both theoretical and practical experience in service management and operating a garage as a place of business, shop methods, record keeping.

T40 A.T. Auto Body Design and Construction. Credit 3(3-0).

The theory of body construction, shapes, parts of panels. How they are constructed, methods of replacing, repairing damaged panels, etc.

T41 A.T. Fundamentals of Painting. Credit 3(2-3).

The safety procedures, proper care of equipment, paint materials, color matching, the methods of preparation of surface for finishing, masking, sanding, priming, types of paints.

T42 A.T. Auto Body Rebuilding and Repairing. Credit 5(3-4).

Disassembly and assembly of damaged panels, repairing fender, doors, quarters panels, tops, the techniques of welding and soldering. Practical fender repairing including bumping, dinging, filing, sheet metal, heat shrinking, solder filling, plastic filling, use of disc sanders and aligning and roughing panels.

T43 A.T. Auto Body Painting and Finishing. Credit 5(3-4).

The procedure of spray lacquer, synthetic enamel and acrylic paints, spotting, color blending, proper under and ground coats. Garnish molding of interior, estimation.

BUILDING CONSTRUCTION TECHNOLOGY

The curriculum in Building Construction will meet the needs of students who wish to acquire, in a minimum length of time, the principles of building construction and related work. Training is given in planning, estimating, and construction work; also, the necessary related technical information concerning materials and processes of related trades is provided.

This training includes information on basic management and business operation, so that the students will be capable of serving as construction supervisors and contractors, after they have had a reasonable amount of experience.

CURRICULUM

First Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math 311, 312	5(5-0)	5(5-0)	.....
English 211, 212	5(5-0)	5(5-0)	.....
Mechanical Drawing, M.E. 311, 312	3(0-6)	3(0-6)	.....
Building Materials Lab, T21 B.C., T22 B.C., T23 B.C.	5(3-6)	5(3-6)	5(3-6)
Materials of Construction, I.Ed. 324 .....	.....	.....	3(3-0)
Blueprint Reading, T25 B.C. ....	.....	.....	3(3-0)
Surveying, Math. 324 .....	.....	.....	3(1-4)
Military Science 211, 212, 213	2(2-2)	2(2-2)	2(2-2)
Painting, T27 B.C. ....	.....	.....	3(1-6)
	20	20	19

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Industrial Psychology, Psy. 209 .....	.....	3(3-0)	.....
Math 313	5(5-0)	.....	.....
Technical Drafting, T21 T.D., T22 T.D., T23 T.D.	4(1-6)	4(1-6)	4(1-6)
Building Materials Lab, T30 B.C., T31 B.C., T32 B.C.	5(3-6)	5(3-6)	5(3-6)
Contracts & Specifications, M.E. 327 .....	.....	.....	3(3-0)
Military Science 221, 222, 223	2(2-2)	2(2-2)	2(2-2)
Estimating, T33 B.C., T34 B.C.	3(3-0)	3(3-0)	.....
Accounting 301 .....	.....	3(3-0)	.....
Business Administration 351 .....	.....	.....	5(5-0)
	19	20	19

Third Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 321, 322	5(3-4)	5(3-4)	.....
Concrete & Masonry Construction, T40 B.C., T41 B.C., T42 B.C.	5(3-6)	5(3-6)	5(3-6)
Electric Wiring, T43 B.C.	3(2-3)	.....	.....
Mechanical Equip. for Bldg., T45 B.C. ....	.....	3(2-3)	.....

Wood and Steel Construction, T47 B.C. ... ..	.....	3(2-3)
Human Relations, T11 B.C.	5(5-0) .....	.....
Heating & Air Conditioning, M.E. 334	3(3-0) .....	.....
Problems of Construction, T48 B.C.	3(3-0)
Building Materials Lab, T49 B.C.	5(3-6)
Foremanship Fundamentals, T50 B.C.	3(3-0)
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	16	18
		19

DESCRIPTION OF COURSES

T11 B.C. Human Relations. Credit 5(5-0).

A study of problems in the work-a-day world which will aid one in getting along with people on the job, in the community and the home. These units of work include: habits one may acquire in order to improve human relations, privileges, rights and obligations as a citizen; obtaining and holding a job; labor problems, social and commercial insurance and the use of leisure time.

T21 B.C. Building Materials Lab. Credit 5(3-6).

Full size models of various framing sections of dwelling houses are constructed and studied, with special attention given to building codes and zoning laws. The National Building Code is used in conjunction with textbooks covering the construction of residence foundations and framing systems. Instruction is given to the selection of correct sizes of floor joists, rafters and other structural members. Practical training includes floor, wall and roof construction.

T22 B.C. Building Materials Lab. Credit 5(3-6).

Practical training in residential building construction is continued with consideration given to the various finishes and completion processes including cornice work, and siding. The proper application of millwork, insulation and hardware are studied.

T23 B.C. Building Materials Lab. Credit 5(3-6).

Practical bench work training is given in making joints, followed by cabinet work requiring the use of both bench and machine operation. Instruction is also given in the use of steel square and in roof framing. Students lay out the different kinds of roof rafters using full-sized material.

T25 B.C. Blueprint Reading. Credit 3(3-0).

A study of architectural blueprints for all students who must translate drawings into actual existing structures. This course is also useful for students in general layout of electrical, plumbing and heating and air conditioning systems.

T27 B.C. Fundamentals of House Painting. Credit 5(3-6).

Theory and practice of and with the materials, tools, and equipment used in painting and decorating. Training is given in preparing surfaces, mixing and applying all types of house paints. The composition, characteristics and properties of paints and the surfaces suitable for their application are given careful consideration.

T30 B.C. Building Materials Lab. Credit 5(3-6).

Methods of general interior and exterior house painting. Students become familiar with all the tools, equipment, and materials used in the trade. He receives actual practice as well as the technical information necessary to acquire a thorough working knowledge of the painting and decorating trades.

T31 B.C. Building Materials Lab. Credit 5(3-6).

Deals with the use of woodworking tools and the operation and maintenance of woodworking machines. The selection and uses of various kinds of cabinet construction by hand tools and machine operations. Actual shop practice in making various types of cabinets such as kitchen cabinets, built-in wardrobes, and bookcases.

T32 B.C. Building Materials Lab. Credit 5(3-6).

Machine woodwork, including advanced operations on the power saws, jointer, planer, mortiser and shaper; advanced construction; manufacturing methods, materials, detailing of cabinets, and quantity survey. Prerequisite: T31 B.C.

T33 B.C. Estimating. Credit 3(3-0).

This course is designed to enable the student to develop a fundamental knowledge of estimating construction cost of the various materials utilized in the building construction field.

T34 B.C. Estimating. Credit 3(3-0).

A study of various types of estimates in determining the cost of materials, equipment, labor and other items which are pertinent to an accurate system of estimating.

T40 B.C. Concrete and Masonry Construction. Credit 5(3-6).

An introduction to the kinds and uses of brick, mortar, concrete, and masonry tools and equipment. Construction of walls, piers, chimneys, estimating, etc.

T41 B.C. Concrete and Masonry Construction. Credit 5(3-6).

This course covers laying out work as designed by working drawing, the erection of building structures of brick, block, and structural tile. The care and operation of mechanical equipment.

T42 B.C. Concrete and Masonry Construction. Credit 5(3-6).

The study and application of various types of masonry construction and construction methods employing various masonry materials. Emphasis on brick veneering, concrete foundations, floors, etc.

T43 B.C. Electric Wiring. Credit 3(2-3).

The study of materials, methods, and nomenclature used in residential and commercial wiring, including a study of national and local codes, layout, plans, and specifications.

T45 B.C. Mechanical Equipment for Buildings. Credit 3(2-3).

The basic principles and advanced practices in the selection, installation, operation and maintenance of equipment in the general areas of water supply and sanitation.

T47 B.C. Wood and Steel Construction. Credit 3(2-3).

A study of the design of beams, girders, joist, and columns in both wood and steel. Included is the study of various timber fasteners, steel and timber trusses, and steel frame works.

T48 B.C. Problems of Construction. Credit 3(3-0).

A study and analysis of various problems in the construction industry. Consultants and experienced personnel in the building construction field are frequently called upon as guest lecturers.

T49 B.C. Building Materials Lab. Credit 5(3-6).

The course is designed to give the student a general and practical knowledge of the decorative, fabricated, synthetic materials and other products used in the building trades. Work in the laboratory will include experimental exercises and actual working with these materials.

T50 B.C. Foremanship Fundamentals. Credit 3(3-0).

A study of industrial accident prevention, considering the nature and extent of the accident problem. A practical study is given the technique for control of industrial hazards together with the fundamentals of good organization.

T51 B.C. Metal Work. Credit 3(2-3).

A comprehensive coverage of the basic principles and procedures in building construction metal work. The two general classes of metal work covered will be outside metal jobbing and heating and ventilation.

T52 B.C. Masonry Construction. Credit 2(0-6).

A study of the history of masonry among the ancient and modern nations of the world. Practical work in the construction of masonry projects.

T53 B.C. Masonry. Credit 2(0-6).

A general study of the uses of brick, concrete, plaster, tile and stone in the construction industry.

T54 B.C. Use of Power Tools in Cabinet Making. Credit 2(0-6).

Care and use of power tools. Built-in cabinets, small projects such as desks, bookcases or useful projects for the home.

T55 B.C. Finishing in Cabinet Making. Credit 2(0-6).

Inside trim. Varieties and characteristics of timber used in projects. Applying hardware, application of stain, varnish, shellac and enamel.

T56 B.C. Color Dynamics. Credit 2(0-6).

A course designed to give a technical knowledge of colors and their uses. Mixing and matching colors, color psychology, color schemes and color harmony will be included in the course.

T57 B.C. Decorating for Homemakers. Credit 2(0-6).

A course designed to give the student a knowledge of general painting done around the home. A study will be made of the types of materials and paints used as well as coating small areas and articles found around the home.

DRAFTING TECHNOLOGY

The Drafting Technology curriculum is designed for students with good aptitudes in drafting subjects, and for those who wish to secure positions as draftsmen and other related positions in the technical fields.

The broad scope of subject matter prepares the student to seek or take employment not only in his chosen field, but in many other fields

of mechanical technology; for a draftsman has a knowledge of many fields including mathematics, machine tools, and materials and processes.

Special attention is given to insure necessary skills on the part of the student in all fields of modern drafting. Also, special provisions are made for the preparation of the student for positions of a supervisory capacity.

CURRICULUM

First Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mechanical Drawing, M.E. 311, 312	3(0-6)	3(0-6)	.....
Accounting 301 .....	.....	.....	3(3-0)
B.A. 351 .....	.....	5(5-0)	.....
Military Science 211, 212, 213	2(2-2)	2(2-2)	2(2-2)
Math 311, 312, 313	5(5-0)	5(5-0)	5(5-0)
English 211, 212	5(5-0)	5(5-0)	.....
Machine Technology, T11 M.T.	3(2-2)	.....	.....
Foundry, T28 M.T. ....	.....	.....	2(2-4)
Descriptive Geometry, M.E. 314 .....	.....	.....	3(0-6)
	18	20	15

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Technical Drawing, T21 T.D., T22 T.D., T23 T.D.	4(1-6)	4(1-6)	4(1-6)
Materials of Construction, I.Ed. 324	3(3-0)	.....	.....
Military Science 221, 222, 223	2(2-2)	2(2-2)	2(2-2)
Technical Drawing, T24 T.D. ....	.....	.....	3(3-0)
Human Relations, T11 B.C. ....	.....	.....	5(5-0)
Physics 321, 322	5(3-2)	5(3-2)	.....
T14 M.T.	3(2-2)	.....	.....
Estimating, T33 B.C. ....	.....	3(3-0)	.....
Contracts and Specifications, M.E. 327 ....	.....	.....	3(3-0)
Problems in Construction, T48 B.C. ....	.....	3(3-0)	.....
	17	17	17

DESCRIPTION OF COURSES

T21 T.D. Technical Drawing. Credit 4(1-6).

Working drawings of connectors, fabrication materials, fasteners, footings, maps, plot plans, and floor plans for industrial and residential buildings.

T22 T.D. Technical Drawing. Credit 4(1-6).

Working drawings dealing with structure details, blueprint reading, tracing, and methods of reproduction. The student at this point must be able to classify papers, drawing media of all types and their uses, and to construct graphs and make graphical solutions to drafting problems.

T23 T.D. Technical Drawing. Credit 4(1-6).

Working drawings chosen of different degrees of difficulty. Each student will be required to do detail working drawings in machinery, electrical, residential and industrial structures.

T24 T.D. Drafting Room Methods. Credit 3(3-0).

Lectures from visiting lecturers in the field of drafting, visitation to drafting departments in industry and in the surrounding community, and a study of drafting room procedures. A brochure must be developed by each student.

ELECTRICAL TECHNOLOGY

The purpose of the Electrical Technology program is three-fold: first, to train a person to become a skilled technician; second, to provide good basic skills in related fields that will enable him to properly communicate with others in his chosen field. Third, inspire him to improve himself in order to become a better citizen as well as a better technician.

The curriculum is designed to provide in the first year basic courses that will give a good foundation in mathematics, English, and other courses that will provide discipline in the development of concise scientific thinking and at the same time enable them to grasp new ideas and conceive better ways of putting these ideas into practice.

The second year has three options:

OPTION I—RADIO-TELEVISION SERVICING

This course is designed to prepare one to meet the needs of the radio-television service industry which has become one of the largest of the service fields. The course will meet the need of those who wish to establish their own business or seek employment as service-men.

OPTION II—INDUSTRIAL ELECTRONICS

The second option has courses designed for those who plan to go into industry or government work as electronic technicians. Emphasis is placed on specialized electronic circuits encountered in the industry. The person is trained to work with the engineer in solving the many problems that are faced in this space age.

OPTION III—INDUSTRIAL ELECTRICITY

The third option is designed to train the student to fill the need for the great demands of the world-wide boom in building and construction of homes, and commercial buildings. Courses are designed to conform with the National Electrical Code are stressed and design and methods follow closely with those used in industry in order to enable one to prepare the student for employment in the industrial electricity industry.

CURRICULUM

First Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math 311, 312	5(5-0)	5(5-0)	.....
English 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Mechanical Drawing 311, 312	3(0-6)	3(0-6)	.....
Fund. of Elect. & Mag., T11 E.T.	3(2-3)	.....	.....
Military Science 211, 212, 213	2(2-2)	2(2-2)	2(2-2)
Electronic Circuits, T21 E.T. ....	.....	3(2-3)	.....
Physics 311 .....	.....	.....	5(4-2)
Accounting 301 .....	.....	.....	3(3-0)
Radio & Elec. Circuits, T22 E.T. ....	.....	.....	3(2-3)
	<hr/> 18	<hr/> 18	<hr/> 18

OPTION I—RADIO-TELEVISION SERVICING

CURRICULUM

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 312	5(4-2)	.....	.....
Basic Television, T23 E.T.	5(3-4)	.....	.....
B.A. 302	3(3-0)	.....	.....
Instruments & Meas., T24 E.T.	3(3-0)	.....	.....
Military Science 221, 222, 223	2(2-2)	2(2-2)	2(2-2)
T.V. Lab, T25 E.T., T26 E.T. ....	.....	5(2-6)	5(2-6)
Human Relations, T11 B.C. ....	.....	5(5-0)	.....
Construction Technique, T27 E.T. ....	.....	5(3-4)	.....
Audio, T28 E.T. ....	.....	.....	5(5-0)
Special Problems, T29 E.T. ....	.....	.....	3(3-0)
Shop Technique, T30 E.T. ....	.....	.....	3(3-0)
	<hr/> 18	<hr/> 17	<hr/> 18

OPTION II—INDUSTRIAL ELECTRONICS

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 312	5(4-2)	.....	.....
B.A. 302	3(3-0)	.....	.....
Amplifiers, T31 E.T.	5(5-0)	.....	.....
Military Science 221, 222, 223	2(2-2)	2(2-2)	2(2-2)
Communications, T33 E.T. ....	.....	5(3-4)	.....
Electronic Control, T34 E.T. ....	.....	5(5-0)	.....
Industrial Psychology, T35 B.C. ....	.....	5(5-0)	.....
Electronic Systems, T35 E.T. ....	.....	.....	5(3-4)
Semi-Conductors, T35 E.T. ....	.....	.....	5(5-0)
Electronic Circuits, T37 E.T. ....	.....	.....	5(5-0)
Instruments & Measurements, T32 E.T. ...	3(2-3)	.....	.....
	18	17	17

OPTION III—INDUSTRIAL ELECTRICITY

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 312	5(4-2)	.....	.....
B.A. 351	5(5-0)	.....	.....
Wiring Methods, T38 E.T.	5(3-4)	.....	.....
Illumination, T39 E.T.	3(2-3)	.....	.....
Military Science 221, 222, 223	2(2-2)	2(2-2)	2(2-2)
Human Relations, T11 B.C. ....	.....	5(5-0)	.....
Estimating, T33 B.C. ....	.....	3(3-0)	.....
Wiring Design, T42 E.T. ....	.....	5(5-0)	.....
Low Voltage Wiring, T43 E.T. ....	.....	5(2-6)	.....
Motor Control, T44 E.T. ....	.....	.....	5(5-0)
Electric Motor Winding, T45 E.T. ....	.....	.....	5(2-6)
Special Problems, N.E. Code, T46 E.T. ...	.....	.....	5(5-0)
	20	20	17

DESCRIPTION OF COURSES

T11 E.T. Fundamentals of Electricity and Magnetism. Credit 3(2-3).

This course deals with A. C. and D. C. circuits, Ohm's law, and power relationship.

T21 E.T. Electronic Circuits I. Credit 3(2-3).

A solid foundation is built in circuits required in electronics. Emphasis is placed on circuit analysis using problem-solving techniques.

This course includes Ohm's law, power and efficiency, conductors, Kirchoff's law, inductance, and capacitance.

T22 E.T. Radio and Electric Circuits. Credit 3(3-2).

This course is a more advanced study of electronic circuits and makes a further study of more advanced circuits than those studied in T21 E.T.

T23 E.T. Basic Television. Credit 5(3-4).

This course is a study of basic television circuits including both the receiver and transmitter. The complete television receiver is studied using all types of special television test equipment and the tech-master demonstrator for classroom demonstration.

T24 E.T. Instruments and Measurements. Credit 3(3-0).

This course offers the student the opportunity to become familiar with a variety of electronic measuring instruments such as the voltmeter, V. T. V. M. signal generator, tube checker, oscilloscope, watt meter, ohmmeter, and other instruments used in electronics for measurement.

T25 E.T. Television Laboratory. Credit 5(2-6).

The problems in the installation and servicing of television receivers in the home, test pattern analysis, checking and adjusting the receiver and the use of trouble-shooting charts and basic test equipment are taught.

T26 E.T. Television Laboratory. Credit 5(2-6).

Special problems encountered in the installation of receiving antennas and advanced methods of trouble-shooting receivers are covered during this quarter.

T27 E.T. Construction Technique. Credit 5(3-4).

This laboratory course provides a background in techniques used in construction. This includes point to point wiring and square corner wiring, all types of soldering, component color coding, screw types and sizes and the correct use of hand tools. Chassis are laid out and constructed.

T28 E.T. Audio. Credit 5(5-0).

This course makes a special study of all types of A.F. voltage amplifiers and power amplifiers; frequency response, amplitude and phase distortion, feed back with special emphasis placed on high fidelity amplified design and construction are also included.

T29 E.T. Special Problems. Credit 3(3-0).

This course gives the student both theoretical and practical solutions to many special problems encountered in Radio-Television Service.

T30 E.T. Shop Technique. Credit 3(0-6).

Correct shop practices are applied to manufacturing techniques, testing and servicing procedure, building laboratory test equipment, apparatus layout and construction.

T31 E.T. Amplifiers. Credit 5(3-6).

A special study of all types of A.F. voltage amplifiers and power amplifiers. Frequency response, amplitude and phase distortion, feed back with special emphasis placed on high fidelity amplified design and construction.

T32 E.T. Instruments and Measurements. Credit 3(2-3).

Opportunity is offered for the student to become familiar with a variety of electronic measuring instruments such as the voltmeter, V.T.V.M. signal generator, tube checker, oscilloscope, watt meter, ohmmeter, and other instruments used in electronics for measurements.

T33 E.T. Communications. Credit 5(3-6).

Electronic circuits used in communication are covered in this course. This includes telephone, telegraph, and mobile radio. Special emphasis is placed on the citizen band and the correct installation and maintenance of equipment used for two-way radio communication.

T34 E.T. Electronic Control. Credit 5(3-4).

Basic courses are combined to form systems. The laboratory work consists of experimental investigations using typical equipment and methods.

T35 E.T. Electronic Control Systems. Credit 5(3-6).

A continuation of T34 E.T.

T36 E.T. Semi-Conductors. Credit 5(3-6).

A study of transistors, diodes, and other devices used in electronic circuits that are in the semi-conductor class.

T37 E.T. Electronic Circuits. Credit 5(3-6).

A solid foundation is built in circuits required in electronics. Emphasis is placed on circuit analysis using problem-solving techniques. Included are: Ohm's law, power and efficiency, conductors, Kirchoff's law, inductive and capacitance.

T38 E.T. Wiring Methods. Credit 5(3-6).

A study of wiring and wiring methods used in buildings. The proper selection of wire sizes, fuses, circuit breakers, distribution systems, control circuits and service entrances.

T39 E.T. Illumination. Credit 3(2-2).

Principles and practices of illumination are stressed. Modern illumination principles, calculation procedures, and equipment are coordinated in design problems of complete fluorescent and incandescent lighting installations.

T42 E.T. Wiring Design and N.E. Code. Credit 5(3-4).

This course is a study of design and layout of electrical wiring systems for lighting, motors, and control circuits in accordance with standard practice and the recommendations of the National Electric Code.

T43 E.T. Low Voltage Multi-Control System. Credit 5(3-6).

Low voltage wiring methods, selection of controls, and relays. This system uses small relays which are actuated by low voltage switches to control lighting and other circuits in residential commercial installations.

T44 E.T. Motor Controls. Credit 5(3-4).

The application, operation, characteristics of controls used with electrical motors.

T45 E.T. Electrical Motors and Winding. Credit 5(2-6).

Principles of single phase, split phase, and poly-phase motors are studied. Proper use of the coil winding machine, oven, and correct methods of testing motors.

T46 E.T. Special Problems. Credit 4(4-0).

Presentation by students of oral and written reports in development and standards in wiring according to the current changes in the National Electric Code.

T47 E.T. Introduction to Photography. Credit 3(1-4).

Small camera operation and roll film development, operation and techniques used in making good pictures with small cameras, types of film used in small cameras and their development.

T48 E.T. Contact and Projection Printing. Credit 3(1-4).

A continuation of T47 E.T. with training in contact, projection printing, and various finishing methods.

T49 E.T. Composition in Photography.

Planning of subject material for composition in the picture, using natural and artificial light in photography, and means of correcting common errors.

T50 E.T. Portrait Photography and Negative Retouching. Credit 3(1-4).

Basic portrait lighting, artificial and natural. Basic posing of individuals and groups. Improving picture quality by negative retouching.

T51 E.T. Sensitometry. Credit 3(2-2).

A study is made of photo cells, electric eye and their use in photography. Papers and materials used for saloon mounting and television viewing.

T52 E.T. Color Photography. Credit 3(2-2).

An intensive course in advantages and disadvantages of color, principles of color, types of color film, film development, color harmony and clothing, subject color, subject contrast, and latest improvements in color.

MECHANICAL TECHNOLOGY

The course is planned for those persons who wish to become skilled technicians, tool and die specialists, production foremen in machine shops and metal working industries of all types and technical assistants to engineers. A person planning to enter this course should have a good mechanical aptitude and ability. Basic procedures in manufacturing processes of the metal working industries are covered as well as the directly related courses explaining the "why" of many procedures in the manufacturing process. Selected courses are included in the curriculum in order to help the graduate advance in the industrial world.

CURRICULUM**First Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
T21 M.T., T22 M.T., T23 M.T.	5(3-4)	3(1-4)	3(2-2)
Chemistry 111, 112	5(3-4)	5(3-4)	.....
M.E. 311, 312	3(0-6)	3(0-6)	.....
Math 311, 312, 313	5(5-0)	5(5-0)	5(5-0)
Military Science 211, 212, 213	2(2-2)	2(2-2)	2(2-2)
T24 M.T. ....	.....	1(0-2)	.....
T14 M.T. ....	.....	.....	3(2-2)
T11 A.T. ....	.....	.....	3(2-2)
English 211 .....	.....	.....	5(5-0)
	<hr/> 20	<hr/> 19	<hr/> 21

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
T25 M.T., T26 M.T., T27 M.T.	5(3-4)	5(3-4)	5(3-4)
M.E. 318, 319, 321	1(0-2)	1(0-2)	3(2-2)

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
M.E. 327	3(3-0)	.....	.....
English 212	5(5-0)	.....	.....
M.E. 314	3(0-6)	.....	.....
T28 M.T.	2(2-4)	.....	.....
Military Science 221, 222, 223	2(2-2)	2(2-2)	2(2-2)
Psy. 209 .....	.....	3(3-0)	.....
Physics 321 .....	.....	5(3-4)	.....
Phys. 322 .....	.....	.....	5(3-4)
Accounting 301 .....	.....	.....	3(3-0)
B.A. 351 .....	.....	5(5-0)	.....
T29 M.T. ....	.....	.....	1(0-2)
	21	21	19

DESCRIPTION OF COURSES

T11 M.T. Machine Tool Lab. for Non-Mechanical Technology Majors.
Credit 3(2-2).

A basic course in machine tool lab consisting of bench work, drill press work, and basic engine lathe operations.

T12 M.T. Machine Tool Lab. for Non-Mechanical Technology Majors.
Credit 3(2-2).

Basic and advanced operations on the lathe, shaper, milling machine, grinder, and turret lathe.

T13 M.T. Machine Tool Lab. for Non-Mechanical Technology Majors.
Credit 3(2-2).

Advanced operations on all major machines. Prerequisite: T12 M.T.

T14 M.T. Industrial Metal Technology. Credit 3(2-2).

A study of the principles and practices in industrial sheet metal work. The uses and care of sheet metal hand tools, sheet metal mensuration, and sheet metal drafting principles.

T15 M.T. Industrial Metal Technology. Credit 3(2-2).

A study of machine processes in sheet metal work, general sheet metal construction methods, and sheet metal finishing and decorating.

T16 M.T. Industrial Metal Technology. Credit 3(2-2).

This course is designed to give a brief coverage of shop layout, the design and construction of machine guards, hood design for the removal of gases, dust, smoke, and fumes. Shop safety and management.

T17 M.T. Industrial Drafting. Credit 3(2-2).

This course is designed to assist those persons seeking advancement in the knowledge of reading plans, design methods, and procedures, and for those persons who wish to become draftsmen or sheet metal sketchers.

The course deals comprehensively with drafting standards in building trades, and industrial sheet metal practice as approved by national standard practice.

T21 M.T. Machine Tool Lab. I. Credit 5(3-4).

Basic processes in machine shop practice. Emphasis will be on the drill press, lathe and layout methods and the use of hand tools and measuring instruments.

T22 M.T. Machine Tool Lab. II. Credit 3(1-4).

Continuation of machine shop basic operations with emphasis on the milling machine, shaper, grinders, precision layouts and fittings. Prerequisite: T21 M.T.

T23 M.T. Elementary Metallurgy. Credit 3(2-2)

Elementary study of the basic structures of metals and their composition. Case hardening, annealing, drawing, quenching, melting points of various metals, temperatures for hardening, etc. Prerequisite: T22 M.T.

T24 M.T. Blueprint Reading. Credit 1(0-2).

A basic course in machine blueprint reading from the simple to the more complex blueprints. Prerequisite: M.E. 311.

T25 M.T. Tool Design. Credit 5(3-4).

The design and manufacture of tools, jigs, fixtures for production work. Prerequisite: T23 M.T.

T26 M.T. Tool Making and Testing. Credit 5(3-4).

Techniques in the building of jigs, fixtures, special cutting tools, press dies and other special tools used in production work, and test of properties of materials. Prerequisite: T25 M.T.

T27 M.T. Advance Machine Tool Lab. Credit 5(3-4).

Planning and running a machine shop. The problems connected with the setting up and running of a machine shop will be discussed. Techniques in buying equipment and supplies; also, selecting competent workers, estimating production time will be discussed. Prerequisite: B.A. 351.

T28 M.T. Foundry. Credit 2(2-4).

A basic course in the processes of foundry work. A study of foundry equipment, field trips to local foundries, and demonstrations of foundry practices.

T29 M.T. Inspection Techniques. Credit 1(0-2).

A study of the inspection equipment and inspection techniques used in modern industry. Practice in the use of inspection equipment and tools.

RESERVE OFFICERS' TRAINING CORPS

Department of Air Science

Department of Military Science

RESERVE OFFICERS' TRAINING CORPS

DEPARTMENT OF AIR SCIENCE

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

The Reserve Officers' Training Corps (ROTC) at A. and T. College consists of those students enrolled for training in the Department of Military Science and Tactics or in the Department of Air Science. These Departments are integral academic and administrative subdivisions of the institution. The senior Army Officer and the senior Air Force Officer assigned to the college are designated as Professor of Military Science (PMS) and Professor of Air Science (PAS), respectively. These senior officers are responsible to the Department of Defense and the institutional Coordinator of Military Training for conducting the training and academic program. Army officers who are assigned to the College as instructors in the ROTC are designated Assistant Professors of Military Science; Air Force officers, as Assistant Professors of Air Science. Non-commissioned officers of the Army are assigned as assistant instructors and administrative personnel. Non-commissioned officers of the Air Force are assigned as Specialists, Technicians, and Supervisors in the area of Administration, Education, Personnel, and Supply.

COURSES OF INSTRUCTION

Programs of instruction for both the Army and Air Force ROTC consist of a two-year basic course and a two-year advanced course. The basic course in either the Army or the Air Force ROTC is required for all physically fit male freshmen and sophomores not less than 14 years of age who have not been excused from the course by the College administration. Enrollment in advanced courses is contingent on the passing of an advanced course qualifying test and selection by the Professor of Military Science or Professor of Air Science. However, any student who is selected for enrollment enrolls in the advanced course for the purpose of obtaining a commission as a Reserve Officer in either the Army or the Air Force. He must be a citizen of the United States and possess the character and loyalty requirements prescribed by the Armed Forces. In addition, he must have demonstrated the qualities and positive potential for becoming an effective officer. A student will not be enrolled in the advanced Air Force ROTC course if his age is such that he will be unable to complete all of his ROTC training and his academic requirements for a degree from this institution prior to reaching 26½ years of age, if he is subsequently programmed for flying training, or 28 years of age, if he is programmed for other than flying training.

Enrollment in Advanced Army ROTC will be limited to those students who can qualify for appointment as second lieutenants prior to reaching 28 years of age.

A veteran who has served at least six months of active duty service with any branch of the Armed Forces may be excused from the freshman portion of the basic ROTC course. A veteran with one year or more of active service in the Armed Forces may be excused from the entire basic ROTC course and, upon reaching his junior year, may be permitted to enroll in advanced courses of the Army or the Air Force, at the discretion of the Professor of Military Science and the Professor of Air Science respectively, provided he meets the requirements mentioned in the preceding paragraph.

UNIFORMS AND EQUIPMENT

All regularly enrolled members of the Air Force and Army ROTC units are furnished by the Government free of cost, uniforms, equipment, and text books. A deposit of ten dollars (\$10.00) is required of all students at time of registration to cover uniforms issued to them. This fee will be refunded when uniforms are returned. The student is responsible for the care, safe-guarding, and cleaning of property issued to him. He is financially responsible for the loss, excessive wear, breakage due to carelessness, or unauthorized use of clothing and equipment.

All ROTC property must be returned to the Military Property Custodian at the end of the school year or when a student withdraws from school.

CREDIT

Credit is allowed for work at other institutions having an ROTC Unit established in accordance with the provisions of the National Defense Act and regulations governing the ROTC. Record of a student's prior training in the ROTC is obtained from the institution concerned.

FINANCIAL AID

Students enrolled in the advanced course are paid a monetary allowance in lieu of subsistence at the daily rate equal to the value of the commuted ration (0.90) for a total period not to exceed 595 days during the two years of the course. Students in the basic course receive no monetary allowance.

ORGANIZATION OF THE ROTC

The Air and Army ROTC units are organized into a Joint Cadet Corps. The Corps consists of the Army ROTC Cadet Battle Group, the Air Force ROTC Cadet Group, the Army and Air Force ROTC Drill

Teams and Bands. The Corps is commanded by a Cadet Colonel selected from among Army and Air Force Cadets on alternate years. The Corps staff consists of two cadet officers from each unit. The units combine to perform as a corps in several special occasions during the academic year.

DISTINGUISHED CADETS

The Professor of Air Science and Professor of Military Science with the concurrence of the College are authorized to designate outstanding cadets as Distinguished AFROTC Cadets and Distinguished Military Students respectively. These cadets may upon graduation be designated Distinguished Graduates. They may subsequently be awarded commissions in the regular components of the Army or Air Force provided they desire to apply and are selected.

SELECTIVE SERVICE IN RELATION TO THE ROTC

Enrollment in the ROTC does not in itself defer a student from induction and service under the Universal Military Training and Service Act. The law provides that "within such numbers as may be prescribed by the Secretary of Defense, any person who (A) has been or may hereafter be selected for enrollment or continuance in the senior division, Reserve Officers' Training Corps, or in the Air Force Reserve Officers' Training Corps, or the Naval Reserve Officers' Training Corps; (B) agrees, in writing, to accept a commission, if tendered, and to serve, subject to order of the Secretary of the Military Department having jurisdiction over him, not less than two years of active duty after receipt of a commission in the army or four years if commissioned in the Air Force; and (C) agrees to remain a member of a regular or reserve component until the eighth anniversary of the receipt of a commission in accordance with his obligations under subsection (d) of section 4 of this title, shall be deferred from induction under this title until after completion or termination of the course of instruction and so long as he continues in a regular or reserve status upon being commissioned, but shall not be exempt from registration."

DEPARTMENT OF MILITARY SCIENCE

MAJOR LAWRENCE D. SPENCER, *PMS*

The program of instruction, as offered by the Department of Military Science and Tactics, has as its objectives the production of junior officers who have the qualities and attributes essential to their progressive and continued development as officers of the Army of the United States; the

laying of a foundation for intelligent citizenship within the student; the imparting to the student of a basic military knowledge of benefit to himself and to the military in the event he becomes a member thereof, and the furtherance of the program of the College.

COURSES IN MILITARY SCIENCE & TACTICS

The Basic Course

211. Military Science I. Credit 2(1-2).

A history of the organization of the Army and ROTC, with a study of the reasons for their continued growth. Purposes and objectives of military training, its benefits and potentialities. Organization of Infantry units with emphasis on specific duties and responsibilities of key personnel. Introduction to the evolution of firearms with particular attention to detailed construction, mechanical functioning, and proper application of marksmanship techniques. Development of initiative and self-confidence through leadership training and drill experience.

*212. Military Science I. Credit 2(1-2).

A continuation of instruction in mechanical functioning of military small arms and the proper application of marksmanship techniques. Discussions of the missions and responsibilities of the United States Army in National Security with emphasis on the geopolitical aspects of contemporary world history. Further development of initiative and self-confidence through leadership training and drill experience.

213. Military Science I. Credit 2(1-2).

Discussions on National Security are continued. Discussions will include the Role of the Army in all Conceivable Types of War, Manpower and Training Problems and the student's personal responsibility as a citizen and leader. Leadership training with a view toward the cultivation of desirable traits of leadership and self confidence.

**221. Military Science II. Credit 2(2-2).

A comprehensive survey of the origin and growth of the United States Army. A teaching of the principles of war with illustrations of their application to modern warfare. A general study of the foreign and United States military policies and the basic causes leading to the various wars in which the United States has participated. Emphasizing of the continuing progress of the United States Army with stress on factors leading to organizational, tactical, logistical, operational, strategic and social patterns found in the present-day Army. American History with primary emphasis on its military aspects.

*An elective academic subject approved by the PMS is required at some period during the freshman year of all MS I cadets.

**See note page 307.

****222. Military Science II. Credit 2(2-2).**

A continuing study of American Military History emphasizing the attributes of American military leaders and their contributions to the advancement of the Art of War. The growing influence of logistics as brought about by the complexities of modern warfare. The basic principles of map mechanics to include military grid reference systems, map projections, and determination of scale, distance and direction. Includes an analysis of aerial photographs. Leadership laboratory.

****223. Military Science II. Credit 2(2-2).**

A continued study of map reading techniques with emphasis on map coordinates, determination of elevation, percentage of slope, visibility and terrain analysis. Introduction to basic tactics and operations. Leadership laboratory.

The Advanced Course**231. Military Science III. Credit 3(3-2).**

Instruction in the personal and professional qualifications required of an effective military instructor. Emphasis is on practical application through use of supervised presentations by each student of a military lesson. Methods and procedures for effecting good military instruction are stressed. Leadership principles designed to give each student a broad aspect of the leadership requirements of the newly commissioned officer. Stress is on the human element in the application of these leadership principles. Leadership, drill and command with stress on the development of self-confidence and the exercise of command.

232. Military Science III. Credit 3(3-2).

Roles of the various combat arms and technical services of the U. S. Army illustrating how these Army branches are welded together into the formidable "Army Team." An introduction to signal communications at small unit level. Review of the Principles of Offensive and Defensive Combat and their application to units of the Infantry Division Battle Group. Practice in the application of sound principles of military leadership.

†233. Military Science III. Credit 3(2-2).

A continuation of small unit tactics and communication. A study of communication principles and procedures in the Infantry Division Battle Group. Orientation on the nature and purpose of ROTC summer camp

******Those cadets enrolling in Military Science II during school year 1961-62 are required to take map reading during MS 221, U. S. Army and National Security and Introduction to Basic Tactics during MS 222 and a continuation of basic tactics during MS 223, rather than courses as outlined herein for MS II. The courses outlined herein are effective with the 1962-63 school year.

†An elective academic subject approved by the PMS is required at some period during the junior and senior year of all MS III and IV cadets.

training to include sociological factors involved. Leadership laboratory designed to point out responsibilities and qualities of a leader and human behavior.

241. Military Science IV. Credit 3(3-2).

Staff Organization and Duties. Estimate of the Situation and Combat Orders. Principles of Combat Intelligence to include the collection of information of the enemy, weather and terrain; and the analysis and subsequent proper dissemination of intelligence. The composition and mission of the various Military Teams. Training management including the scheduling of systematic procedures and efficient organization.

Fundamentals of Supply and Movement of Small Units. Leadership, drill and command with emphasis on the essential attributes of leadership ability in all fields of human endeavor.

242. Military Science IV. Credit 3(3-2).

Army administration emphasizing personnel management and counselling. Principles and procedures of Military Law to include the types of military courts and a comparison of military and civilian systems of justice. Leadership with emphasis on the essential attributes of leadership in all fields of human endeavor.

‡243. Military Science IV. Credit 3(2-2).

An analytical treatment of the geographical and economic aspects of National Security in the United States. A study of the War Potential of the United States, and selected foreign countries, as conditioned by certain natural and human factors. An orientation on the customs of the service and other aspects of Army life applicable to the newly commissioned officer. Leadership laboratory with emphasis on methods of maintaining discipline and morale.

DEPARTMENT OF AIR SCIENCE

FRED L. ALLEN, MAJOR, USAF, *Chairman*

The Air Force Reserve Officers Training Corps at the Agricultural and Technical College aims to develop in selected college students, through a permanent program of instruction, those qualities of leadership and other attributes essential to their progressive advancement to positions of increasing responsibility as commissioned officers in the United States Air Force.

‡Those cadets enrolling in Military Science IV for school year 1961-62 will pursue courses as previously designated. The program as outlined herein for military science IV is effective with school year 1962-63.

The purpose and specific objectives of this program are:

- a. To develop in selected cadets, through a sound education and training program, the initial motivation to serve as career officers in the United States Air Force.
- b. To develop in cadets by precept, example, and participation the attributes of character, personality, and attitudes essential for leadership.
- c. To develop in cadets an interest in the Air Force, and an understanding of its mission, organization, operations, problems, and techniques.
- d. To provide that military education and training which will prepare cadets to discharge the duties and responsibilities required of them as Air Force officers.
- e. To select and motivate cadets for career fields as specifically required by the United States Air Force.

COURSES IN AIR SCIENCE

The Basic Course

AIR SCIENCE 1

A.S. 211. Foundations of Air Power-1.

An appropriate college course and its credits will be substituted in lieu of Air Science academics.

Two hours of Leadership Laboratory Training are required per week.

A.S. 212. Foundations of Air Power-1.

An appropriate college course and its credits will be substituted in lieu of Air Science academics.

Two hours of Leadership Laboratory Training are required per week.

A.S. 213. Foundations of Air Power-1. Credit 2(2-2).

A general survey of air vehicles and principles of flight and elements and potentials of air power.

AIR SCIENCE 2

A.S. 221. Foundations of Air Power-2. Credit 2(2-2).

A survey of the evolution of aerial warfare with emphasis on principles of war, military instruments of national security, and professional opportunities in the United States Air Force.

A.S. 222. Foundations of Air Power-2. Credit 2(2-2).

A survey of the development of elements of aerial warfare, employment of air forces, and space operations.

A.S. 223. Foundations of Air Power-2.

An appropriate college course and its credits will be substituted in lieu of Air Science academics.

Two hours of Leadership Laboratory Training are required per week.

The Advanced Course***AIR SCIENCE 3****A.S. 231. Air Force Officer Development. Credit 3(3-3).**

Knowledge and skills required of a junior staff officer in the Air Force. This includes staff organization and functions, communicating, and instructing.

A.S. 232. Air Force Officer Development. Credit 3(3-3).

Problem solving techniques are taught as applied to Air Force Staff and Command problems. In addition the basic principles of leadership psychology are studied.

A.S. 233. Air Force Officer Development. Credit 3(3-3).

Problems in leadership and management. Application of the principles and theories of problem solving and leadership to simulated and real Air Force problems are treated. In addition the military justice system is taught.

****AIR SCIENCE 4****A.S. 241. Weather and Navigation. Credit 3(3-3).**

An introduction presenting the weather and navigational aspects of airmanship, such as temperature, pressure, air masses, participation, weather charts, navigational charts and dead reckoning navigation, globes and maps in the air age world, and the geography of climate.

A.S. 242. Military Aspects of World Political Geography. Credit 3(3-3).

The concepts of the military aspects of political geography; maps and charts; factors of power; and the geographic influences upon political problems with a geopolitical analysis of the strategic areas.

A.S. 243. International Relations; and the Air Force Officer. Credit 3(3-3).

Three quarter hours are devoted to the study of the major factors underlying international tensions—nationalism, imperialism, and communism; the attempts to alleviate these tensions—balance of power concepts, the League of Nations, the United Nations and the regional security organizations; and the rise of the two super-powers—the United

*Cadets usually attend Summer Training Unit after completing Air Science 3 and before taking Air Science 4.

**Air Science 4 Cadets may be required to substitute Geography 244 and Government 236 for Air Science 242 and 243 respectively.

States and the USSR. Ten contact hours are devoted to the study of material to help the cadet make a rapid effective adjustment to active duty as an officer in the United States Air Force.

****A.S. 244. Flight Training. Credit 3(3-3).**

Academic Instruction devoted to civil air regulations, and Meteorology to include a recognition of weather, fog icing and cloud formation and other procedures such as Aerial Navigation and radio, radio voice procedures, Flight Service and Flight Safety are also treated.

****A.S. 245. Flight Training. Credit 3(3-3).**

Flight Instruction provided with sufficient scope to qualify the cadet in the basic principles of contact flying in aircraft of 65-200 horsepower includes air discipline, flight inspection, basic flight maneuvers, emergency procedures, precision landings, take offs, and cross country flights.

****Must be approved by the Dean of the Department in which student is registered. Students enrolled in A.S. 244 and 245 may, at their option, accept or decline credit offered.**

PRIZES AND AWARDS

PRIZES AND AWARDS

Five Alumni Scholarships of \$1,000 each awarded by the Agricultural and Technical College Alumni Association to the five high school seniors who scored highest on the College Entrance Psychological Test. Recipients as of September, 1960:

REBECCA BAILEY.....Nash Central High School, Nashville, N. C.
THOMASENA CORBETT..Notre Dame High School, Greensboro, N. C.
JARVIS FULP.....Atkins High School, Winston-Salem, N. C.
MAURICE HARRIS.....Crestwood High School, Norfolk, Va.
CARL LEONARD.....Adkins High School, Kinston, N. C.

The James G. K. McClure Educational and Development Fund, Inc. scholarships of \$200 each, awarded to needy, deserving first-year students from the mountain counties of North Carolina who show intellectual ability and Christian character.

JOHNNY LONG ERVIN

THOMAS EDWARD CONLEY

The Susie B. Dudley Scholarship of \$100.00 presented by the L. J. Spaulding Real Estate Business, Greensboro, North Carolina, in honor of the late Mrs. Susie B. Dudley. This goes to a selected student in the Graduate School.

The Alice B. Campbell Scholarship of \$100.00 given by the A. and T. College Ladies Faculty Club to a needy girl with excellent character and good scholastic rating.

BUENA PAULINE MOORE

The Ralph Johns Athletic Scholarship Award of \$100.00 given by Mr. Ralph Johns of Greensboro, North Carolina, to foster the development of good sportsmanship, leadership and manliness.

SAMUEL GRAHAM

The Beta Iota Omega Chapter of Alpha Kappa Alpha Sorority Scholarship Award of \$100.00 for the year 1960-1961.

VIVIAN K. JOHNSON

The Brotherhood Award of \$50.00 given by Mr. Ralph Johns of Greensboro, North Carolina, to the student who during the year has done most to promote brotherhood, goodwill and inter-racial understanding.

WILLIAM G. WANENDEYA

The Zeta Alpha Chapter, Zeta Phi Beta Sorority, Incorporated, Scholarship Award of \$25.00.

MARY HARPER

The Hamilton Gold Watch Award presented by the Hamilton Watch Company to the graduate in Engineering who has most successfully combined proficiency in his major field of study with notable achievements in the social sciences and humanities.

CALVIN B. DIXON

The Saslow's Incorporated Medal Award to the graduating senior with the best record in the School of Education and General Studies.

CHARLES S. DEBOSE

The Saslow's Incorporated Medal Award to the graduating senior with the best record in the Social Sciences.

WILLIAM HAROLD STEWART

The Merrick Medal Award to the graduating senior for all-around excellence in Industrial Arts.

NATHANIEL WIGGINS

The William Andrew Rhodes Medal Award to the person who attained the best record in Musical Studies and Activities during the year.

LESLIE BUTLER

The Spaulding Medal Award to that member of the graduating class with the highest achievement in Agriculture, presented by Mrs. L. J. Spaulding of Greensboro, North Carolina.

CLARENCE ARNOLD FRANKLIN

The Philadelphia Chapter, Alumni Association Trophy Award to the Most Outstanding Athlete of the year.

ALVIN A. ATTLES

The Gate City Chapter, Alumni Association Award to that member of the graduating class voted by the Administrative Council as having rendered the Most Distinctive Service to the college and to the community.

JAMES R. CHESTNUTT

The William H. Foushee Memorial Scholarship Cup Award presented by Dr. J. M. McGhee of Greensboro, North Carolina, to the member of the Junior Class with the highest scholastic average.

JAMES FRANKLIN BLUE, JR.

The Willetta S. Jones Award presented by Miss R. Winifred Heyward to the graduating senior in the School of Nursing who exemplifies the highest ideals of Christian Living and finer womanhood.

ERNESTINE BUSH

The L. Richardson Memorial Hospital Woman's Auxiliary Award to the graduating senior in the School of Nursing for all-around excellence in Nursing.

BEATRICE ADDERLEY

The Band Awards for Four Years of Meritorious Service in the College Band.

VERNA D. BELCHER
LESLIE BUTLER
JAMES CAMP

ROBERT EASON
WANDA GUNNINGS
ERMA HARRELL
NATHAN JENKINS

WILLIAM KING
FRANK NORRIS
ROOSEVELT PITT

Recipients of Awards for Four Years of Meritorious Service in the College Choir.

PATRICIA BURNEY
MARJORIE GRAHAM

DORIS HICKS

CHARLIE STEVENS
NORA WILLIAMS

Recipients of Awards for Three Years of Meritorious Service in the College Choir.

LARRY BELL
RUBY COSTON

LA JOIE HORTON
RICHARD SMITH

JUANITA TATUM
WILLIAM WHITAKER

Recipient of Award for Four Years of Meritorious Service in the College Male Chorus.

CHARLIE STEVENS

National Scholastic Press Association Awards for high journalistic achievement on *The Register*, the college newspaper.

The Star—for exceptional leadership ability, brilliant writing, editing, and photography.

ALBERT L. ROZIER, JR.

The Journeyman—for a minimum of two years of exceptional service.

CLEVELAND M. BLACK
GORDON F. BULLOCK

WILHELMINA E. HARRISON
ERNEST L. JOHNSTON, JR.

Honorable Mention for Meritorious Service on the Staff of *The Register*.

LOUIS BELFIELD
SAMUEL GEE

JUANITA HARGROVE
WALTER S. HARRIS
JOHN O. McDONALD

EDWARD W. PITT
WILLIAM H. STEWART

Awards for Meritorious Service with the Richard B. Harrison Players.

CATHERINE HINSON
LAVERN MADISON

FLORA ANN MARTIN
JOSEPH MITCHENER

KELLY MOORING
BETTY JEAN PIERCE

Honorable Mention is accorded the following persons for valuable services to the Harrison Players.

MARZELLA DURANT

CENNETTE FISHER
WILLIAM GRAHAM

HERMAN THOMAS

Cited for *Meritorious Service* in the Student National Education Associate for the academic year 1959-1960.

EDITH CROWDER

KATYE B. FOYE

MARY E. HARPER

The Fellowship Council Meritorious Service Awards for Four Years of Distinguished Service in Religious Activities.

MARY E. ADAMS
SOPHIE E. BROWN
ERNESTINE M. BUSH

ELMA D. CARLISLE
JOHN S. DAVIS
MILDRED E. DUREN

FRED JONES
NAOMI C. SMITH
GEORGE A. WATERS

The Fellowship Council Honorable Mention Awards for from one to three years of Meritorious Service in Religious Activities.

MIGGIE J. CHAPPELL
JAMES R. CHESTNUTT
CALVIN B. DIXON

BROWN J. HAWKINS
WILLIAM HILL
CLARA M. LEACH

CURTIS F. REEVES
WILLIE H. RUSHING
LAWRENCE R. SMITH

GRADUATES

GRADUATING SENIORS HOLDING MEMBERSHIP IN SCHOLASTIC AND SCIENTIFIC HONOR SOCIETIES

ALPHA KAPPA MU HONOR SOCIETY

COLORS: *Blue and White*

Christalene Clark	John Olden McDonald	William H. Stewart
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BETA KAPPA CHI SCIENTIFIC SOCIETY

COLOR: *Gold*

Christalene Clark	John Olden McDonald
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KAPPA DELTA PI HONOR SOCIETY

COLORS: *Jade Green and Violet*

Catherine Beatty	Fannie M. Currie	John Olden McDonald
Christalene Clark	Mildred E. Duren	William H. Stewart
	Juanita P. Hargrove	

PI OMEGA PI HONORARY BUSINESS SOCIETY

COLORS: *Silver, Blue and Gold*

Fannie M. Currie	Shirley J. Gillard	Helen Monroe
Mamie R. Dickens		Mary M. Scott

SCABBARD AND BLADE MILITARY HONOR SOCIETY

Lewis Grady	Harvey Long	James Ward
Scott Halyard		George A. Waters

SIGMA RHO SIGMA HONOR SOCIETY

COLORS: *Red and White*

Jacquelyn Bell	Willy LeGette	William H. Stewart
Doretha Branch	Flora Ann Martin	Samuel C. Still
Juanita P. Hargrove	Minnie Powell	Felton Thomas
	Barbara E. Samuels	

SECOND LIEUTENANTS COMMISSIONED IN THE UNITED STATES ARMY (INFANTRY) RESERVE

May 29, 1960

Albert Coviell	*Scott M. Halyard, Jr.	*James H. Ward
Lewis E. Grady	Harvey E. Long	*George A. Waters
	Spooner A. Purnell	

Cadets Commissioned December 4, 1959

Milton L. Baker	*Thomas A. Brown, Jr.	Leon D. Murray
	Alfred L. Keyes	

SECOND LIEUTENANTS COMMISSIONED IN THE UNITED STATES AIR FORCE

May 29, 1960

William E. Knox	*Charles A. Luther	Felton A. Thomas
	Joseph D. Taylor	

Cadet Commissioned January 15, 1960

Bernard E. Wilson

Cadets Commissioned March 5, 1960

David L. Washington	*Winfred A. Wilson
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BACHELOR OF SCIENCE DEGREES CONFERRED MAY 29, 1960

BACHELOR OF SCIENCE IN AGRICULTURE

Sutton Austin	Knella G. E. Francis	Leslie E. Guthrie
Roy Augustus Barrett	Clarence A. Franklin	Artnel Samuel Henry
James Herbert Brown	Willie L. Graham	Eddie Lamb, Jr.
James E. Douglas	Joscelyn E. Grant	R. Lawrence, Jr.
Everett Bryant Dozier	Roosevelt Greenwood	Carl T. Murphy
Robert A. Fairley	William Nelson Griffin	Wessel George Patten
William Perry Fennell		Jimmie Dee Sharpe

BACHELOR OF SCIENCE IN HOME ECONOMICS

†Mary Elizabeth Adams	Doris Davenport	Doris Olivette Greene
Bernetha R. Bethea	Rachel Carolyn Davis	Earlene Hurdle
Christine E. Boomer	Daisy C. Finch	Sarah M. Joyce
Lillie E. Boyd	Gwendolyn J. Forbes	Wilma J. Lynn
Miggie Jean Chappell	Anne Louyse Gaines	Fannie M. M. Rouse
Gracie Mae Cheek		Fannie E. Snipes

*Denotes Distinguished Military Graduates.

†*Magna Cum Laude.*

BACHELOR OF SCIENCE—BIOLOGY

Jacey Jefferson Bell	Ellis L. Jones	Decorris L. Reid
Marion Butler, Jr.	William Edward Knox	Sarah M. Sims
Moses Delancey Cain	*John Olden McDonald	Felton A. Thomas
*Alfred H. Campbell	William B. McIver	*George A. Waters, Jr.
James C. Faulcon	A. M. Muldrow, Jr.	Frank T. Witherspoon
Edward Earl Ford	Oscar James Wooten	Bennie J. Woodard

BACHELOR OF SCIENCE—CHEMISTRY

John C. Bordeaux	Scott Morris Halyard	James R. Jones
Larry Lee Fewell		Reginald L. Simmons

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

John T. Brown, II	Alphonso Ferguson	George R. Manning
Kathleen Brown	Ernest Grant	Gaston Leon McNeill
Freddie Bynum	Brown J. Hawkins	Billy Lamon Moore
Cornelius F. Clark	Mary Magnolia Hodge	Philbert T. Neal
L. L. Cockerham, Jr.	*Edward B. Johnson	Curtis Felton Reaves
Willie M. Colclough	Fred Jones, Jr.	Joel Tinnin
Bonnie L. Crandall		Theodore M. White
Troy Alec Dalton		W. G. Youngblood

BACHELOR OF SCIENCE IN BUSINESS EDUCATION

Fannie M. K. Currie	*Shirley Jean Gillard	Helen B. Nixon
Mamie Ruth Dickens	Carrie Joyce Gorham	Mary M. Scott
Doris Lee Downing	Helen Monroe	Blanchie Lee Smith

BACHELOR OF SCIENCE IN ARCHITECTURAL ENGINEERING

Ernest Daniel Davis	Calvin Benson Dixon	Winfred A. Wilson
James Davis		Robert Wright

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Arthur W. Bradley	Charles Albert Luther	‡Ernest L. Sanders, Jr.
Earl Grant	Johnnie B. McCarter	Joseph David Taylor
Evander L. Humphrey	Charles E. Murray	William D. Tootle
Vera Rhue Jones	Charles G. Sanders	David L. Washington
Harvey Eugene Long		Bernard E. Wilson

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Samuel Lehmar Brown	Albert R. Coviell	John Henry Morris
Sam Brown, Jr.	Clarence E. Foye	Percy Lee Mullen
Oscar D. Covington	Lee Otis Freeman	Spooner A. Purnell

*Cum Laude.

‡Summa Cum Laude.

BACHELOR OF SCIENCE IN INDUSTRIAL EDUCATION

James H. Armstrong	Alfred Lee Keyes	Robert Ridgill
Wm. R. Beaty, Jr.	Wm. Furman Miller	James L. Snipes
Herman L. Daniel	David Lee Moore	James L. Stover
Charles W. Douglas	Rudolph Parker, Jr.	George Tate, Jr.
Al Jolson Hilliard	Claude C. Pelzer	*Nathaniel Wiggins

BACHELOR OF SCIENCE—MATHEMATICS

George A. Baker	Samuel Cox	Warren M. Pinkett
*Thomas A. Brown	Seth O. Hickerson, Jr.	Willie A. Robinson
†Christalene Clark	John W. James	Robert Lee Sellars
	Robert Eugene Mills	

BACHELOR OF SCIENCE—PHYSICS

Margaret J. Alston	Frank Lamar Barron
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BACHELOR OF SCIENCE IN FINE ARTS

Robert Carlton Riddick

BACHELOR OF SCIENCE—SECRETARIAL SCIENCE

Vicurtis L. Donnelley	Mildred Elaine Duren	Pauline E. Guest
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BACHELOR OF SCIENCE

*Betty Joan Alexander	Estella M. Ellis	Joycelyn D. Mitchell
Vivian O. Alexander	Hugh Wesley Ennis	Leon David Murray
Betty D. Artis	Alphonso V. Evans	*Doris Elizabeth Neal
Mae Frances Atkinson	Evelyn D. Ferguson	Willis E. Nichols
Alvin A. Attles, Jr.	*Charles R. George	Travis A. Patterson
Milton Lewis Baker	Doretha J. Goldston	Margaret H. Pennix
Lina Pearl Barfield	Charles D. Golightly	Ann Gordon Phillips
Jacqueline Bell	Joan A. Gore	Edward Wright Pitt
Barbara H. Bodley	Lewis E. Grady, II	Roosevelt Pitt
Doretha D. Branch	Tylas A. Grant, Jr.	Minnie V. Powell
Joseph Brandon	Minnie J. Gregory	Mason Rainey, Jr.
Leroy Brown, Jr.	Frank L. Hamilton	Ann Elizabeth Rogers
Myrtle Louise Brown	Juanita P. Hargrove	Barbara E. Samuels
Calvin E. Browne	Erma F. Harrell	Charles W. Samuels
James Ralph Buchanan	Charles A. Harrison	Gloria Rhoe Scales
LaDale Y. Buffaloe	David Gerard Harvey	Clarice Sherard
Leslie A. Butler, Jr.	Katherine C. Hatchett	Sterling Smith
Carrie Mae Caldwell	Joe Arthur Hayes	C. S. Stevens, Jr.
Harold R. Carrillo	Minnie Mae Hoyle	*William H. Stewart

*Cum Laude.

†Magna Cum Laude.

Marvin T. Chalmers	Jacqueline Hunter	Samuel Clay Still
James R. Chestnutt	Lillian G. Jackson	James E. Thompson
Alice Fay Clark	Bobby Ray Johnson	Johnsie Lee Threatt
Ercelle Colwell	Richard Clay Jordan	Esther Mae P. Troy
Oddie James Cox	LaFrance J. Kleckley	Charles E. Tyson
Sarah F. Cunningham	Charles H. Lambert	Walter Eugene Wade
Norris E. Currence	Ernestine Lawrence	James Hubert Ward
James E. Davis	Willy L. LeGette, Jr.	Leon Warren
Thomas F. Day	Charles C. S. Lindsay	Martha A. Whitaker
Ellis E. Daye	Simm Long	Jo-Ann Wiley
*Charles S. DeBose	Richard J. Lyons	Alphonso Williams
Winnie Annie DeShazo	Flora Ann Martin	Nora V. Williams
Juanita C. Diggs	Emanuel McKinnis	Roger L. Witherspoon
Robert Eason	Yvonne Melton	Martha Anne Young
		Lucille J. Younger

BACHELOR OF SCIENCE IN NURSING

*Beatrice V. Adderley	Jessie L. Copeland	Hazel Colleen Morgan
Janice H. Blackwell	Jacqueline H. Ewings	Mary Louise Morrow
Georgia Mae Boykins	Geneva McNeill Gray	Clara Faison Oates
Sarah Surgeon Bragg	Ruthie M. Hall	Bertha Lee Owens
Sophie Ann Brown	Ruby Nelle Hayes	Josephine Porter
Earnestine M. A. Bush	Murdis R. James	G. Janet Seymour
Elma Deen Carlisle	Barbara Jean Jeffers	Naomi C. Smith
Elizabeth Connor	Betty Ann Littlejohn	Thylistine Vann
	Hattie Marie Martin	

MASTER OF SCIENCE DEGREES CONFERRED

MAY 29, 1960

MASTER OF SCIENCE IN AGRICULTURAL EDUCATION

Willie Thomas Ellis, Sr., B.S., A. and T. College..... 1950

MASTER OF SCIENCE IN INDUSTRIAL EDUCATION

John Carl Chambers, B.S., A. and T. College..... 1956
 Warren G. Dorsett, B.S., A. and T. College..... 1956
 Sandy C. Fulp, B.S., A. and T. College..... 1941
 James Herbert Little, B.S., West Virginia State College..... 1949
 Ross Harrison, B.S., Tuskegee Institute..... 1955
 Wilbert Rayner, B.S., A. and T. College..... 1956
 Gilbert Acker Robinson, B.S., A. and T. College..... 1954

**Cum Laude.*

Roland S. Watts, B.S., A. and T. College.....	1957
Eugene Webber, Jr., B.S., A. and T. College.....	1955

MASTER OF SCIENCE IN EDUCATION

Mary Henry Lee Armstrong, B.S., A. and T. College.....	1948
Joseph Authur Arnold, B.S., Kittrell College.....	1929
Mattie Mae B. Alexander, B.S., Winston-Salem Teachers College..	1944
Charles Everett Bailey, Jr., B.S., Johnson C. Smith University....	1948
Charmin Hairston Baity, B.S., Winston-Salem Teachers College..	1954
Cornelia Mae Baker, B.S., Fayetteville State Teachers College....	1951
Ethel Brown Ballenger, B.S., Winston-Salem Teachers College....	1940
Mildred Siler Ballentine, B.S., North Carolina College at Durham.	1953
Mary Johnson Banks, B.S., A. and T. College.....	1942
Mary Estelle Barnes, B.S., Fayetteville State Teachers College..	1941
Edward Lee Belton, B.S., Johnson C. Smith University	1945
Ruth Naomi Jackson Benson, B.S., Winston-Salem Teachers College	1940
Forgan Stevenson Berry, B.S., Elizabeth City State Teachers College	1948
Alice B. Biggers, B.S., Winston-Salem Teachers College.....	1946
Lillian Melvin Blount, B.S., Elizabeth City Teachers College.....	1944
Fannie Arlene Blue, B.S., Fayetteville State Teachers College....	1948
Barbara Freedomia Bowser, B.S., Allen University.....	1940
Katie J. McLean Brotherton, B.S., A. and T. College.....	1953
Ada Settle Brown, B.S., Winston-Salem Teachers College.....	1951
Geneva Bland Brown, B.S., A. and T. College.....	1952
Josephine Watkins Brown, B.S., A. and T. College.....	1954
Robert Edward Lee Brown, B.S., Virginia Union University.....	1955
Zilla McGregor Brown, B.S., Allen University.....	1950
Mary Wagstaff Byrd, B.S., A. and T. College.....	1953
Georgia Grene Cagle, B.S., A. and T. College.....	1954
Rosella Ethelbert Caldwell, B.S., Livingstone College.....	1939
Helen Chambers Carelock, B.S., Fayetteville State Teachers College	1942
Sarah Elizabeth Carter, B.S., North Carolina College at Durham..	1949
James P. Chavis, B.S., Johnson C. Smith University.....	1953
Turner Ruffin Coggins, B.S., A. and T. College.....	1950
Ida McLeod Cole, B.S., Fayetteville State Teachers College.....	1947
Maudestine Coleman, B.S., A. and T. College.....	1949
Nannie Hannar Collins, B.S., A. and T. College.....	1945
Katherine Houston Coward, B.S., Bennett College.....	1946
Lena Thomas Crowder, B.S., Winston-Salem Teachers College....	1952
Charles Leroy Crump, B.S., Winston-Salem Teachers College....	1953
Eleanor B. Culbreath, B.S., Fayetteville State Teachers College..	1941
Frederick Douglas Cundiff, B.S., Winston-Salem Teachers College.	1952
Lois L. Currie, B.S., A. and T. College.....	1946
Josephine Elizabeth Currye, B.S., A. and T. College.....	1957

Sadie Thomas Dalton, B.S., Winston-Salem Teachers College.....	1954
Geneva Moore DeVane, B.S., Elizabeth City State Teachers College	1938
Annie Clark Dew, B.S., Fayetteville State Teachers College.....	1955
James Edward Dew, B.S., Fayetteville State Teachers College....	1954
Inez Highland Douglas, B.S., Fayetteville State Teachers College..	1951
Lucille V. Doyle, A.B., Benedict College.....	1950
Agnes Omessa Dunstan Dunn, A.B., Bennett College.....	1939
Lillian Mabel Farley, B.S., Winston-Salem Teachers College.....	1942
Savannah Lee Farmer, B.S., Shaw University.....	1941
Mae Fennell Fields, B.S., Shaw University.....	1939
Mabel Graeber Ford, B.S., Livingstone College.....	1947
Dorus Edison Forney, B.S., A. and T. College.....	1932
Mae Belle Evans Frierson, B.S., Livingstone College.....	1934
Mildred P. Frizzell, B.S., Elizabeth City State Teachers College..	1949
Pauline T. Pickens Gallashaw, B.S., South Carolina State College.	1950
Margaret Boykin Gill, B.A., Bennett College.....	1942
William Jay Gould, B.S., A. and T. College.....	1940
Oscar Mattison Graham, B.S., Fayetteville State Teachers College	1943
Ernestine Elizabeth Green, B.S., A. and T. College.....	1951
Megie Moretta Currie Green, B.S., Fayetteville State Teachers College	1955
Gwendolyn Friende Greene, B.S., Winston-Salem Teachers College	1952
Luther Lee Gwynn, B.S., Winston-Salem Teachers College.....	1936
Margie E. Little Ham, B.S., Fayetteville State Teachers College...	1948
Hazel Riddick Harrell, B.S., Elizabeth City State Teachers College	1949
Calvin Ray Harris, B.S., Winston-Salem Teachers College.....	1950
Mary Newberry Harris, B.S., Winston-Salem Teachers College....	1949
Allie Patterson Hartso, B.S., Johnson C. Smith University.....	1949
Leroy Henderson, B.S., A. and T. College.....	1952
Hazel Lee Herring, B.S., Fayetteville State Teachers College....	1947
Robert Louis Hines, B.S., North Carolina College at Durham....	1942
Anna McCall Ingram, B.S., Winston-Salem Teachers College.....	1941
Evelyn Roberta Martin Johnson, A.B., Benedict College.....	1950
Robert B. Johnson, B.S., A. and T. College.....	1951
John Hooper Jones, B.S., A. and T. College.....	1956
Robert Lee Jones, B.S., A. and T. College.....	1950
Frederick D. King, B.S., Fayetteville State Teachers College.....	1949
Evah Carpenter Lathan, B.S., Livingstone College.....	1951
Wilhelmina Bell Lawrence, B.S., Winston-Salem Teachers College..	1954
Pecolia Graham Lennon, B.S., Fayetteville State Teachers College.	1947
Callie Mae Little, B.S., Elizabeth City State Teachers College....	1943
Annie Reinhardt Loritts, B.S., Johnson C. Smith University.....	1944
Lola Marsh, B.S., Fayetteville State Teachers College.....	1944
Elsie Hairston McKoy, B.S., Winston-Salem Teachers College....	1940
Emma Gill McKoy, B.A., Bennett College.....	1939

James Frank McLaurin, B.S., Fayetteville State Teachers College..	1953
Neill Archie McLean, B.S., Hampton Institute.....	1933
Justin Franklin McNeill, B.S., North Carolina College at Durham.	1949
Gertrude McKoy Meddling, B.S., A. and T. College.....	1938
Lois Clement Miller, B.S., Winston-Salem Teachers College.....	1944
Wilena A. Mitchener, B.S., A. and T. College.....	1953
Effie Johnson Moore, B.S., Clark College.....	1945
Minnie Jane Monroe, B.S., Livingstone College.....	1951
Roby Swinson Murchison, B.S., A. and T. College.....	1953
Annie Virginia Newton, B.S., Fayetteville State Teachers College	1946
Joseph Nichols, B.S., Winston-Salem Teachers College.....	1956
Jack O'Kelley, B.S., Winston-Salem Teachers College.....	1949
Alexander Owens, Jr., B.S., A. and T. College.....	1949
Emmett Edward Palmer, A.B., Virginia Seminary and College...	1937
Amanda Thelma Pemberton, B.S., Winston-Salem Teachers College	1950
Vivian Ann Plummer, B.S., Winston-Salem Teachers College.....	1946
Mildred Ridley Poindexter, B.S., Winston-Salem Teachers College	1943
Henry N. Powell, B.S., Fayetteville State Teachers College.....	1950
Willie Villines Powell, B.S., Fayetteville State Teachers College...	1939
Dorothy Jones Price, B.S., Elizabeth City State Teachers College..	1942
Herbert Marshall Raper, B.S., Fayetteville State Teachers College.	1949
Alexander Raye, Jr., B.S., Winston-Salem Teachers College.....	1954
Waved Ruffin, B.S., A. and T. College.....	1952
Alean Allen Rush, B.S., Elizabeth City State Teachers College...	1947
Gladys Covington Rush, B.S., Livingstone College.....	1951
Hazelena Thomas Rushin, B.S., Winston-Salem Teachers College..	1956
Clarence Irving Sawyer, B.S., A. and T. College.....	1934
Curtis Miller Scales (Mrs.), A.B., Spelman College.....	1934
Fleming Cade Scipio, B.S., Elizabeth City State Teachers College..	1940
James Otho Scipio, B.A., Johnson C. Smith University.....	1929
Marjorie Trumilla Selby, B.S., Elizabeth City State Teachers College	1944
Elinor Atkins Sellars, B.S., Winston-Salem Teachers College.....	1957
Virgie Virginia Sellars, B.S., North Carolina College at Durham..	1948
Rosa Lucille Shumate, B.S., South Carolina State College.....	1958
Geneva Carolyn Sinclair, B.S., Barber-Scotia College.....	1950
Maudie L. Singletary, B.S., Fayetteville State Teachers College..	1950
Calis Earl Smith, B.S., A. and T. College.....	1949
Cornelia Ann Smith, B.S., Fayetteville State Teachers College....	1948
Doris Phifer Smith, B.S., Winston-Salem Teachers College.....	1948
Eddie L. Smith, B.S., Elizabeth City State Teachers College.....	1950
Ernestine Cary Smith, B.S., A. and T. College.....	1946
Eula Spaulding, B.S., Barber-Scotia College.....	1953
James Franklin Spencer, B.S., Winston-Salem Teachers College...	1953
Mazie C. Stanley, B.S., Fayetteville State Teachers College.....	1948

Inez Ralph Steele, A.B., Fisk University	1947
Marjorie Coston Tatum, B.S., Elizabeth City State Teachers College	1949
Louvenia Alfred Taylor, B.S., Grambling College.....	1958
Arthur Loveliest Tutt, B.S., Johnson C. Smith University.....	1948
Samuel Sanford Thomas, B.S., A. and T. College.....	1948
Eva Peed Walton, B.S., Winston-Salem Teachers College.....	1942
Gradie B. Watts, B.S., Fayetteville State Teachers College.....	1945
Velma Gibson Watts, B.S., A. and T. College.....	1955
Annie Smith Whitfield, B.S., Elizabeth City State Teachers College	1942
Edna Wall Williams, B.S., Winston-Salem Teachers College.....	1947
Zadie Vermelle Williams, B.S., Bennett College.....	1944
Patricia W. Wiseman, B.S., Bennett College.....	1950
Richard A. Wiseman, B.S., Winston-Salem Teachers College.....	1950
Louise Ellis Wright, B.S., Livingstone College.....	1934
Martha Dowdy Wyche, B.S., Elizabeth City State Teachers College	1940

HONORARY DEGREE

DOCTOR OF LAWS

THEOPHILUS ELISHA MCKINNEY

Conferred March 17, 1960

ENROLLMENT BY COUNTIES IN NORTH CAROLINA

1960-1961

Alamance	43	Carteret	13
Alexander	3	Caswell	11
Anson	16	Catawba	9
Beaufort	25	Chatham	17
Bertie	18	Chowan	7
Bladen	22	Cleveland	25
Brunswick	10	Columbus	29
Buncombe	27	Craven..	33
Burke	12	Cumberland	41
Cabarrus	16	Currituck	2
Caldwell	4	Davidson	13
Camden	2	Davie	3

Duplin	33	Orange	9
Durham	35	Pamlico	9
Edgecombe	37	Pasquotank	9
Forsyth	119	Pender	22
Franklin	12	Perquimans	13
Gaston	15	Person	16
Gates	4	Pitt	39
Granville	15	Polk	1
Greene	16	Randolph	18
Guilford	415	Richmond	30
Graham	1	Roberson	38
Halifax	44	Rockingham	32
Harnett	23	Rowan	25
Haywood	1	Rutherford	11
Hertford	18	Sampson	17
Hoke	7	Scotland	15
Iredell	11	Stanly	12
Jackson	1	Stokes	4
Johnston	26	Surry	3
Jones	18	Transylvania	1
Lee	12	Tyrrell	6
Lenoir	38	Union	10
Lincoln	1	Vance	27
Martin	17	Wake	43
McDowell	2	Warren	14
Mecklenburg	51	Washington	11
Montgomery	14	Watauga	1
Moore	12	Wayne	47
Nash	26	Wilkes	5
New Hanover	22	Wilson	29
Northampton	30	Yadkin	2
Onslow	7		
Total			2003

ENROLLMENT BY STATES

1960-1961

Alabama	2
Connecticut	1
Delaware	1
District of Columbia	16
Florida	31
Georgia	23
Illinois	1
Louisiana	1
Maryland	6
Michigan	1
New Jersey	20
New York	25
North Carolina	2003
Pennsylvania	10
South Carolina	55
Tennessee	2
Virginia	65
West Indies	17
East Africa	1
West Africa	12
Total	2293

SUMMARY OF ENROLLMENT

1960-1961

Senior Class	417
Junior Class	389
Sophomore Class	467
Freshman Class	644
Special Students	128
Graduate Students	248
Total	2293
Total Enrollment, excluding duplicates, regular session, 1960-1961	2293
Summer Quarter, Undergraduate, 1960	284
Summer Quarter, Graduate, 1960	900
Grand Total 1960-61	3477

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